

# The Construction of Sydney's Landscape

# THE CONSTRUCTION OF SYDNEY'S LANDSCAPE

# THE CONSTRUCTION OF SYDNEY'S LANDSCAPE

MIGUEL AGUILÓ

ACS
ACTIVIDADES DE CONSTRUCCIÓN Y SERVICIOS





Sailing into the depth of Sydney's bay is a unique experience. The exuberance of the vegetation that surrounds its coasts and the crystalline waters of the Pacific that flood the Parramatta River contrast with the fascinating human construction of an open, modern, cosmopolitan and extremely attractive city. This symbiosis between the action of nature and the action of man has become a magnificent landscape, which makes Sydney one of the most beautiful metropolises on the planet.

Following the trajectory of the previous publications of the ACS collection dedicated to the leading cities of the world, *The Construction of Sydney's Landscape* traces the urbanistic and constructive evolution of the largest Australian city from the first settlement led by Captain Phillip in 1788, through the transformation promoted by Governor Macquarie in the early nineteenth century and the subsequent rapid growth sponsored by the gold rush of 1851 and the industrial revolution, to the modernization of the city experienced in the last decades.

During these almost 230 years Sydney has been growing in width and height, maintaining the beauty of its natural surroundings and enhancing it with emblematic buildings such as the famous bridge over the bay or the amazing building of the Opera House.

The ACS Group, mainly through CIMIC and its subsidiaries, has not been unaware of this growth in recent years and remains committed to the development of various projects aimed at improving communications, transportation and habitability in Sydney, such as the construction of a new integrated system of freeways to the west, the extension of the metro to the northwest and the development of a new university campus.

Certainly, the distance that separates us from this beautiful city is one of the difficulties involved in visiting it, but if you intend to do so I guarantee you will not regret it. In any case, I recommend a quiet reading of this book that will allow you to know its history from a different perspective.

**Florentino Pérez**
President of the ACS Group

# CONTENTS


1 Introduction ..... 11

2 Landscapes of Distance and Beauty ..... 17
Wonder and Distance
Of Sailors and Travels
Tension, Hunger, and Beauty
Glimpses of a City

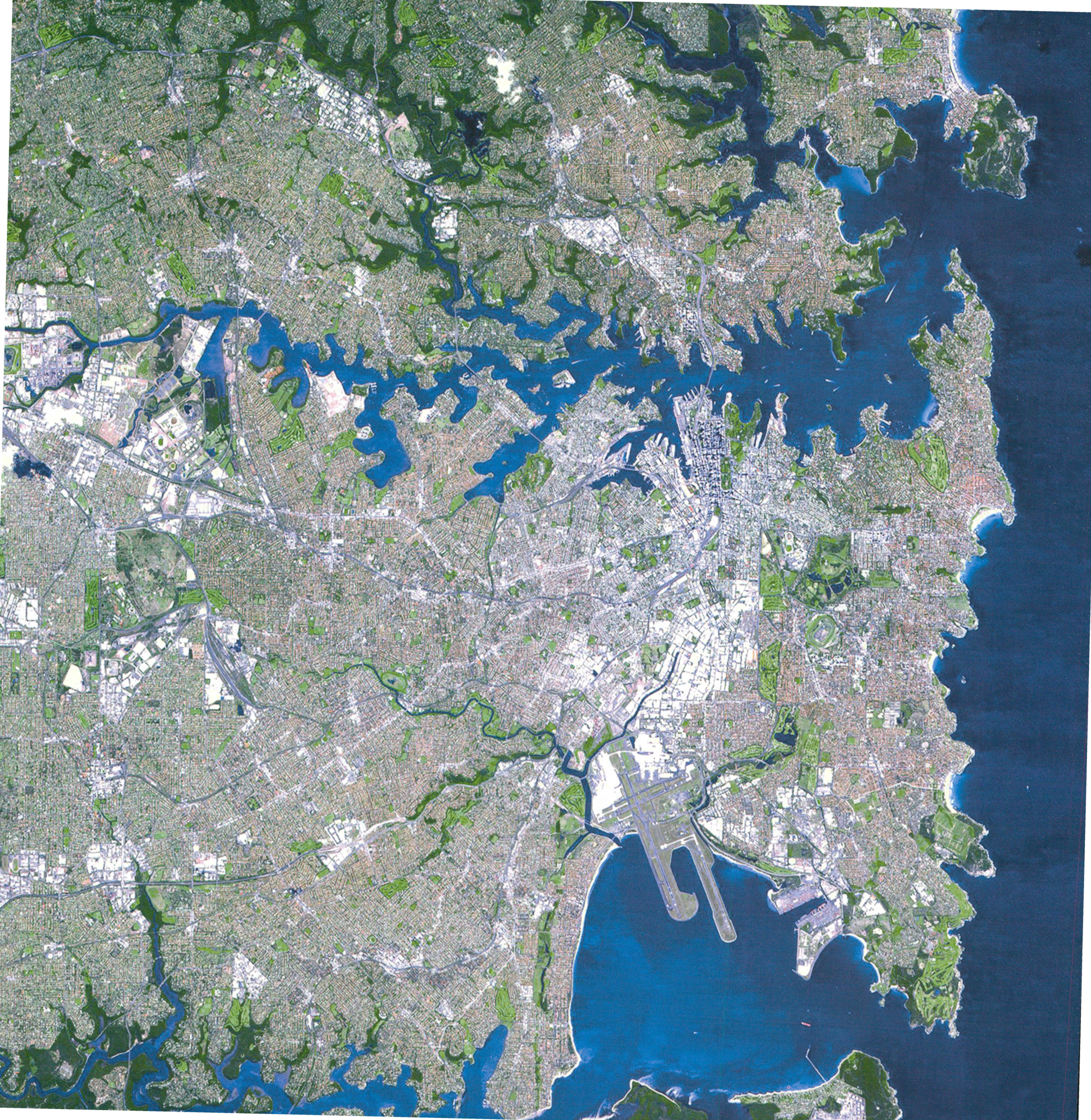
3 Landscapes of Awakening ..... 77
A Harbor for the New City
Roads of Expansion
The Polluted Stream
The Sea Also Presides over Leisure

4 Roads of Overcoming ..... 163
The New Mobility
More Water for the City
Harbour Bridge, 1932
Circular Quay, Heart of Sydney
Coastline, Parks and Beaches

5 Triumph of the Image ..... 255
Modernity in Height
Living Far and Getting Home
Opera House, 1973
The Shore for the People
Landscapes and Contrasts of the Event

6 ACS ..... 353
Recent Works

7 References ..... 365
References
Indexes
Notes



# 1 | Introduction

IN order to understand Sydney one must start from its essential remoteness, but it is necessary to use the correct point of view. The question is not that it is far from here or there, but rather, that everything is far from Sydney. It is the center of an empty immensity.

We know little about this very distant city. We know of its affiliation to the British Empire since not very long ago, to which we associate vague notions of an exceptional nature, its beautiful port, its large population, its love for the sea and the presence of the Opera House.[1]

But perhaps we do not remember that the country was discovered by the famous captain Cook in 1770, thanks to maps seized from the Spaniards a few years earlier in the capture of Manila; that the First Fleet passengers arriving in Sydney in 1788 were not settlers but convicts sentenced to death; that the British Empire wanted to maintain it as a colony of prisoners and prevented for decades its colonial development; or that the consignments of convicts ceased only around 1840, when settlers who had already been redeemed threatened a war of independence following the American example.

Sydney is the beautiful fruit of a painful history in a difficult country, crowned with success.

On the one hand, a group of British outcasts consisting of jailers and prisoners, without the means or skills to settle properly anywhere in the world. But those who know the prisoner condition of those white visitors would be mistaken if they adjudicate the destruction they caused in the place to their presumed condition of dangerous assassins or thieves. They were mostly petty thieves, sentenced to capital punishment by the aberrant British judicial system, who did not know how to survive in that paradise so different from their land.

On the other hand, a beautiful and fragile landscape, in delicate balance between an unlimited ocean and a huge desert, where the Aborigines had built a habitat maintained for centuries. But a landscape not so easy or tame as it initially seemed to its discoverers, stunned by the natural beauty of the bay, early on appreciated as that of an English park. It is a peculiar erosive formation on relatively soft sandstone terrain, almost fractally branched, with coves within coves that embellish and multiply its shores, but with poorly developed soils and difficult to cultivate.

The result of just over two hundred years includes —among many other things— about five million people on a huge area plagued by neighborhoods of small single-family homes; a branched out bay full of small coves with its hillsides full of residences; an urban center formed by a group of skyscrapers that tend to occupy everything as if they were weeds; a coast facing the ocean but welcoming its waves in a rosary of beaches as beautiful as they are proud of their early vocation as public spaces; and a culture of enjoyment of the sea in all kinds of boats and sports, turned into a decisive component of Australian identity.

The great knots of the motorways necessary to communicate this extension, the complex accesses to the bridges and tunnels constructed to overcome the bay, the occupation of land by railroads or the conspicuous presence of skyscrapers were or are still understood as extraordinary interventions, in need of solutions to restore environ-

Previous page: Sydney, Australia, 2001.

Image courtesy NASA/GSFC/METI/ERSDAC/ JAROS, and U.S./Japan ASTER Science Team.

mental order. Time has evidenced the unequivocal association of these projects with the habitual progression of the city. They are not so much exceptions as milestones or steps arising from a particular logic, whose scale and consequences demand a revision from the complexity of the city as landscape.

Therefore, it seems appropriate to place the territory in the front line of scrutiny. And in Sydney, this means approaching the city from its bay, because both its origin and its history and subsequent configuration, are the result of the presence of that sheet of water. But its scale, the connectivity of the roads with the urban fabric and the repercussion of building on the surroundings have surpassed the strictly architectural city models [64:4].

In order to manage simultaneously this great geographical reality and the streets or buildings of the city, so essentially related to it, it is essential to resort to the concept of landscape. Its ductility permits considering elements so different and scale or dimensions so disparate in their mutual relationship, without losing their defining qualities.

A landscape created by its construction, by that first and unrepeatable relationship between the city and the maritime front, successively transformed by new economic and technological ways of understanding this relationship. The result is unequivocal, everything that happened is closely related to the bay. In his book Intercities, Stefan Hertmans gives the harbor a planetary and timeless dimension by understanding Sydney Bay *as a twentieth-century version of what Venice must have once been* [32:16].

The evident but suggestive contradictions or rough edges arising from the reading of its history and the observation of the territory should reveal themselves as differential features of the character of this landscape, or dissolve as similarities with other places, to form a narrative that brings us closer to its meaning. But the task is complicated by two circumstances which, in principle, seemed favorable in this search for meaning.

On the one hand, the attempt to reconcile history and landscape in Sydney has a rare handle: everything that has happened since the British arrival is documented and easily accessible from anywhere in the world. Texts, speeches, images, buildings or roads appear on the internet without the need to refine the search. It is, however, a deceptive facility, since the excess of trivial data ends up hiding any relevant information to construct a coherent account.

On the other hand, direct observation of the city and its territory offers few clues as to what happened there in its little more than two centuries of existence. The beauty and vitality of the current landscape diffuse its history as if they were screens or scenographic filters in a theatrical performance. They smooth edges and nuances to end up forming a pleasant appearance that has ended up infecting the character of its inhabitants, little given to talk about certain issues and manifestly uncomfortable when they come to light.

And, beyond the digital and aesthetic filters, this search for meaning must face the question of the influences of other cultures, mainly but not only Anglo-Saxon. In little more than a century, the old colony learned to distance itself from the metropolis and absorbed like a sponge the culture, the aesthetic and the American way of life to make them their own in less than thirty years. Simultaneously, the presence of the city on the western edge of the Pacific does not go unnoticed for the huge Asian population settled there. Its high standard of living attracts a large number of immigrants from southeast Asia, whose footprint, although located in certain neighborhoods and occupations, is a well-known and obvious reality.

Perhaps not enough time has passed for those suggestive latent conflicts and those influences, capable of shedding light and meaning on the reality observed, to be sufficiently elaborated, digested, theorized or assumed to achieve the necessary distance from the quotidian. But without having them present, the task of finding a minimum of meaning in the historical conformation of the landscape will be idle.

In particular, the combination of painful history and beautiful surroundings has not produced an architecture or engineering of specific or sufficiently differentiated profiles, nor have the European, American and Asian influences

amalgamated into a characteristic expression of how to build, notwithstanding the high level of the professionals and their proven ability to compete internationally. But, out of these contradictions and influences, they have built a landscape of great interest, probably unique in the world, as easy to appreciate as it is difficult to explain.

However, the city has been able to communicate to the world a careful combination of its history and landscape, concentrated in an image of success. Sydney has managed to *position itself,* according to the term currently used to express the will to be among the best, as one of the most attractive cities of the moment.

After this introductory chapter, the second is articulated around the ideas of distance and beauty, from the astonishment of the arrival and the voyages of exploration, the first glimpses of the city, through the consciousness of the first contradictions: the land was difficult to live in and far from the promised paradise of the first impression. The prison background of the journeys and the efforts to build a colony where there were only sailors, soldiers and prisoners are shown in all their harshness. Everyone goes hungry, and nobody knows how to or can build, because they lack tools and skills. However, the project of a city begins to emerge.

In the third chapter everything begins to change; the prison system weakens thanks to the fulfillment of the penalties and to the refusal of the settlers to receive more prisoners. The awareness of freedom spreads, and the place is faced with something of a future that is worth caring for and developing. Although funds are scarce, water supply and sanitation systems, road networks and new streets are planned, and the first institutional buildings are constructed. And above all, the decided predilection of its already citizens for the sea and the care to guarantee its public use begins to settle.

The fourth chapter plunges into the construction of the city, from the principles and criteria inspiring its planning, to the construction of the main Public Works that will become the first permanent elements in the referential system of the city. Particular attention is given to the acquisition of essential technologies to deal with such an enormous task, seemingly impossible to develop in a city founded as prison a century and a half before. Professionals are formed or recycled in Europe and America, but they develop interesting schemes of critical adaptation of imported skills to local circumstances. A good example of this is the great achievement of the Sydney Harbour Bridge, a great work that facilitates the entry of Sydney into the cast of big cities of the world, or the Circular Quay pier, key piece of the relationship between the harbor and the city.

The fifth and final chapter deals with the multiple transformations of the city in the last third of the twentieth century, according to the previous plans and the trends generated by them, both in their physical development and in the evolution of their presentation to the world. Modernity enters the city, which grows exorbitantly in height and completely changes the lifestyles within it. At the same time, it spreads in sprawl to occupy a huge territory in its surroundings, according to guidelines similar to the North American ones, although with certain peculiarities of interest. The car is enthroned as an indispensable element of mobility and leaves its conflicting footprint in many parts of the city, despite the demonstrated excellence of its public transport.

The chapter devotes considerable attention to the gestation of the Opera House and its complex construction, to emphasize its transcendent role in the image of the city and the country. It contains a special mention of the relations between the harbor, the bridge and the docks and its consequences for the transformation of the landscape into image and from image to symbol. In parallel, the reception of this process in the whole world triggered an increase of visitors that is decisively influencing the transformation of the city. Finally, a series of temporary landscapes of the event are described, which help to approach the contradictory Australian imaginary, full of nuances and suggestions.

In Sydney, information is extensive and easily accessible. In principle, everything is online and official pages are immediately accessible without the need for permits and paperwork. Self-censorship or the holds on certain sub-

jects usually censored in other cities, are nonexistent. But in that apparent ease lies precisely the main problem of understanding the city, its roots and its trends. For this constitutes a formidable obstacle, a barely surpassable barrier of flat information, of infinitely repeated undefined data that, curiously, make it difficult to identify critically elaborated sources or writings, capable of providing grips for developing interpretive arguments.

Visits to the city, however, are always a pleasure and compensate for the many plane hours to and fro. Sydney is friendly and easily readable, although it sometimes leads to misunderstanding. And its relationship with the sea is really unique: every corner of the coast contains signs of an intense vital approach on the part of people as to its use and enjoyment. Compared to it, Europeans' much-vaunted relationship with their Mediterranean is no more than a passive contemplation, a fleeting bath or the plundering of its precious wealth.

As always, this book has been made possible thanks to the help of many people. Especially the ACS team in Sydney and Professor Cameron Logan, *Director of Heritage Conservation* at the University of Sydney School of Architecture. In Madrid, I appreciate the help of the Road Engineer Luis Laorden, a specialist in Spanish history in the Pacific Ocean.

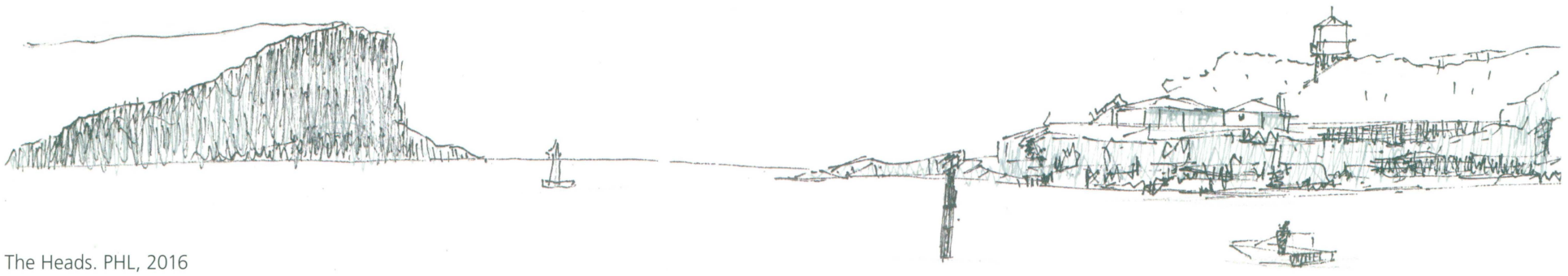
Above all, I would like to thank the usual collaborators, among them Ana Rubio Gavilán and Santiago González Alonso, companions of several trips, and Antonio Sarabia, Óscar Castro and Beatriz Cabau in Madrid, indispensable in the treatment of texts, plans and images. I especially appreciate her dedication to Patricia Hernández-Lamas, who took a long stay at the University of Sydney to write texts, draw landscapes, make many photographs and gather references and data for this book.

Although everything is far from Sydney, it is a vitally close city where one always feels like staying. And do not worry about the trip: with a little practice, the time becomes intense and enjoyment is right at hand. Just do it several times.



# 2 | Landscapes of Distance and Beauty

Wonder and Distance / The Harbor Mouth and Its Shelter / The Reefs, Threshold and Promise / In Search of Shelter / Half and Half, Harbor and City / The Harbor, Raison d'être / From Sydney Everything is Far / The Outback / The Empty Heart / Plenitude and Remorse / Fumes of the Outback / Antipodes and Suggestions / Upside Down / Of Sailors and Travels / The Late Discovery of James Cook / Captain Phillip's Mission / The First Fleet / Prisoners and Supplies / Crimes of the Passengers / Landing Site / The First Sight / The Beautiful Harbor / Even from the Airplane / The Look of Science / Tension, Hunger, and Beauty / Voyage Economy / The Plot of Parramatta / Paths to the Mountains: Parramatta River and Road / Wood and Fishing, New Conflicts / Coexistence with the Aborigines / Landscapes of Plunder and Domination / Smallpox Epidemics / Exile and Suffering / Transportation and Punishments / Harsh Punishments / Scarce and Inadequate Supplies / No Lime, No Bricks, No Skills / Vacuum of Power / Arrival of the Police / The Rum Corps / Glimpses of a City / Sailors Unable to Build / Encampments and Plans / Sailors' Streets / Chaos and Interest / Lachlan Macquarie, Governor / Francis Greenway, Architect / The Rum Hospital / Construction and Remains of the Hospital / Macquarie Street / Macquarie Place, 1810 / Hyde Park Barracks, 1819 / Prisons and Court Houses / Darlinghurst Gaol / Rural Justice / Landscapes of Exclusion and Control / Water Supply / Busby's Bore, 1837 / Botany Bay System / Deposits of Crown St and Paddington / Tank Stream Art Works / Hyde Park / Layouts, Ruptures and Pipelines / Obelisk with Ventilation / Royal Botanic Gardens & Domain, 1816 / Prosperity Arrives with Wool / Magnificent Residences / Vaucluse House / From Residence to Historic Site / The Dream of the West, Blue Mountains.



The Heads. PHL, 2016

## Wonder and Distance

Mark Twain arrived in Sydney in 1895 with his wife Livy and his second daughter Clara. Initially reluctant to the trip, he was captivated. He came from Vancouver on the Warrimoo steamer, and it was the first stop on his 150-conference tour across five continents to pay off bankruptcy debts of his own publishing house. After the negative reaction of the press to his first criticisms, he decided to moderate his story and to offer a benign vision of what he saw and heard in his trip. The country was coming out of a long depression and he felt old, tired and sick, with a long journey ahead: he noted the prosperity and success of the place and admired its investment in buildings and public services [63:XXIX].

The harbor is the object of his first compliment: *We entered and cast anchor, and in the morning went oh-ing and ah-ing in admiration up through the crooks and turns of the spacious and beautiful harbor - a harbor which is the darling of Sydney and the wonder of the world* [63:5].

### The Harbor Mouth and Its Shelter

But his critical spirit and attention to the place reappear when mentioning the harbor mouth and its shelter. *Sydney Harbor is shut in behind a precipice that extends some miles like a wall, and exhibits no break to the ignorant stranger. It has a break in the middle, but it makes so little show that even Captain Cook sailed by it without seeing it. Near by that break is a false break which resembles it, and which used to make trouble for the mariner at night, in the early days before the place was lighted* [63:3].

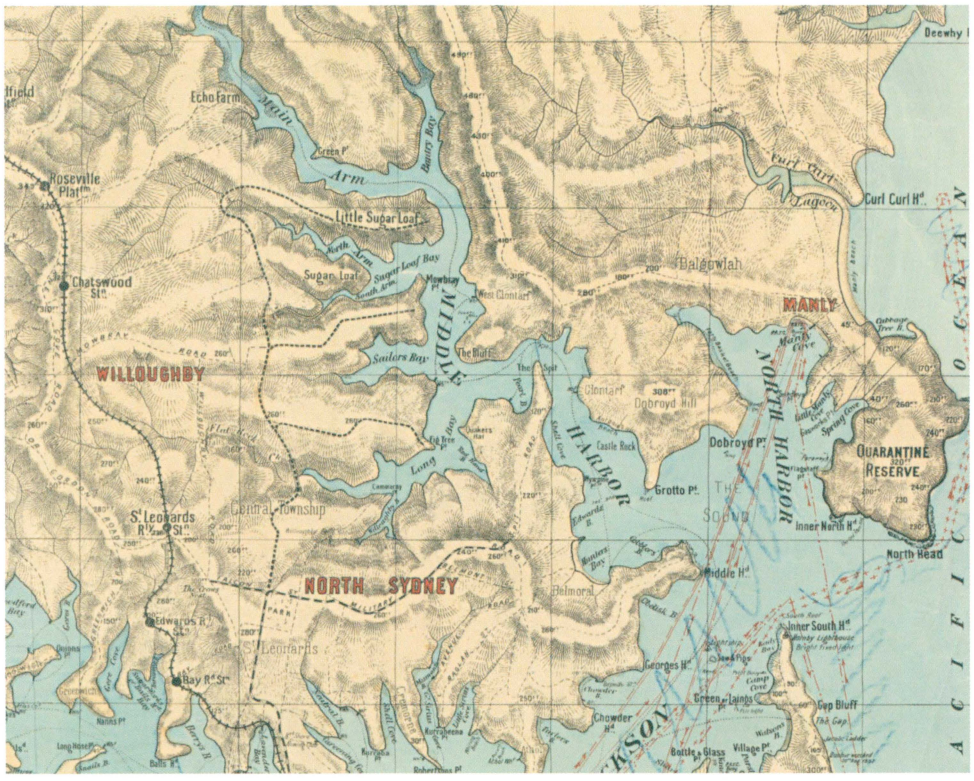
There capsized the memorable Duncan Dunbar, a beautiful sailboat from London, ruled by a captain of great experience and a good connoisseur of the port. It carried a great company of daughters and mothers, long absent, for their education and eagerly awaited as a great vital breath for the population. At dusk the wind fell, and instead of turning to the high seas and waiting for the new day, the captain succumbed to the longing for the arrival of the women and decided to take port in the evening. When he realized his mistake it was too late: the ship crashed on the rocks and only one of its two hundred occupants was saved. The tragedy stuck to the place and its history has remained alive for generations [63:4].

### The Reefs, Threshold and Promise

This harbor mouth is formed by two steeply cut reefs - *The Heads*. The northern head is broad, massive and powerful, while the southern is a pointed peninsula, retracted inwardly with respect to the general north-south alignment of the coast. Its tip seems to emerge from the sea with the precise purpose of sustaining the *Hornby Lighthouse*, a paradigmatic lighthouse constituted at the center of that peculiar configuration at the entrance to the port of Sydney.

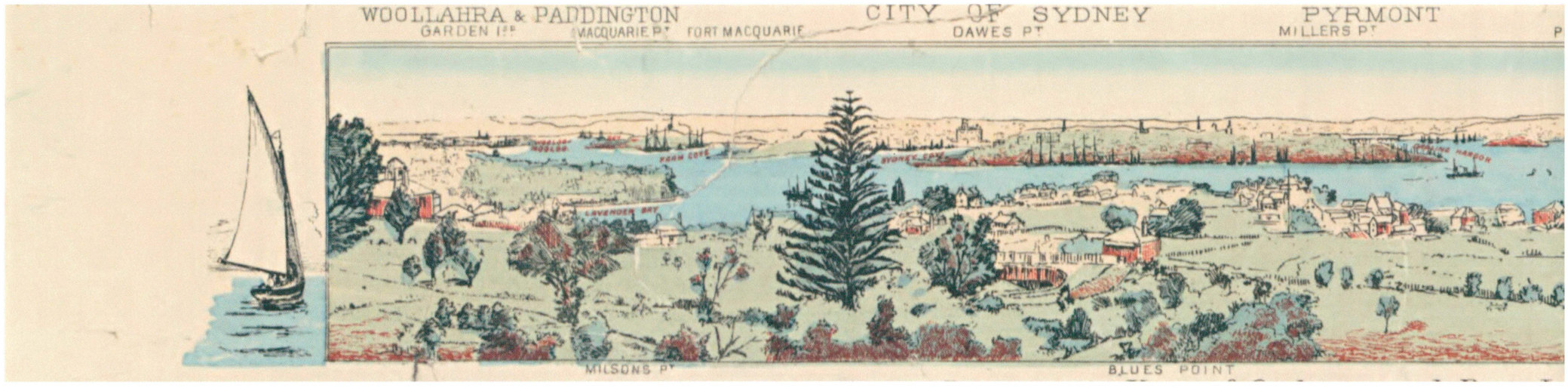
Perhaps Sydney is far, far from the so-called Western world, but The Heads are the beginning of everything. These heads are the threshold and promise of a new country,






The entrance to Port Jackson looking across Watson's Bay. Hurley, Frank. 1910. Courtesy of National Library of Australia, nla.obj-160106507

Port Jackson & Middle Harbor also Parramatta & Lane Cove Rivers. Sydney: Lithographed and published by Higinbotham & Robinson, 62 Elizabeth St., 1894?. Courtesy of National Library of Australia, nla.obj-231448119. (fragment)




Port Jackson & Middle Harbor also Parramatta & Lane Cove Rivers. Sydney: Lithographed and published by Higinbotham & Robinson, 62 Elizabeth St., 1894?. Courtesy of National Library of Australia, nla.obj-231448119. (fragment)

the outpost of an entire continent. The wind and the residual waves that enter the port drive yearnings towards the west, promise of solidity and remoteness. For only the desert can emulate the sea as a gathering place.

By virtue of the retraction of the southern head, the entrance line curves towards the northwest until it exceeds the cliff of the northern head and soon offers three possibilities. On the starboard side there is Manly's cove; at the front is a narrow sea-arm with coves on either side, such as *Hunters Bay, Willoughby Bay, Pearl Bay and Bantry* Bay, and turning ninety degrees to port, one heads towards Sydney Harbor itself, originally called Port Jackson. It is still necessary to pass two coves on either side to go round the promontory of Bradley Head and turn 45 degrees to starboard to take the West course, where in the background the expected skyline of the Harbor Bridge and the downtown become visible.

## In Search of Shelter

It is befitting the seafarer to settle there where the land offers shelter, but that which marveled Mark Twain was sufficiently hidden or irrelevant to Captain James Cook, who passed by in 1770. Cook came from New Zealand, landed somewhat to the south, in Botany Bay, and from there explored the entire Australian coast. Australian



North Head




waters had been navigated by Spanish sailors such as Luis Váez de Torres, the first to cross the Strait between New Guinea and Australia, later called Torres Strait, and Dutch ones such as Abel Janszoon Tasman, discoverer of Tasmania and New Zealand in 1642.

Over time, due to its size, Botany Bay became Sydney's commercial port and nowadays it also hosts its airport, but the first settlers preferred the beauty of the primitive Port Jackson and built the city to enjoy it.

But the harbor is not alien to the city. As Mark Twain writes in the words of a citizen:

*It is beautiful, of course it's beautiful —the Harbor; but that isn't all of it, it's only half of it; Sydney's the other half, and it takes both of them together to ring the supremacy-bell. God made the Harbor, and that's all right; but Satan made Sydney.*

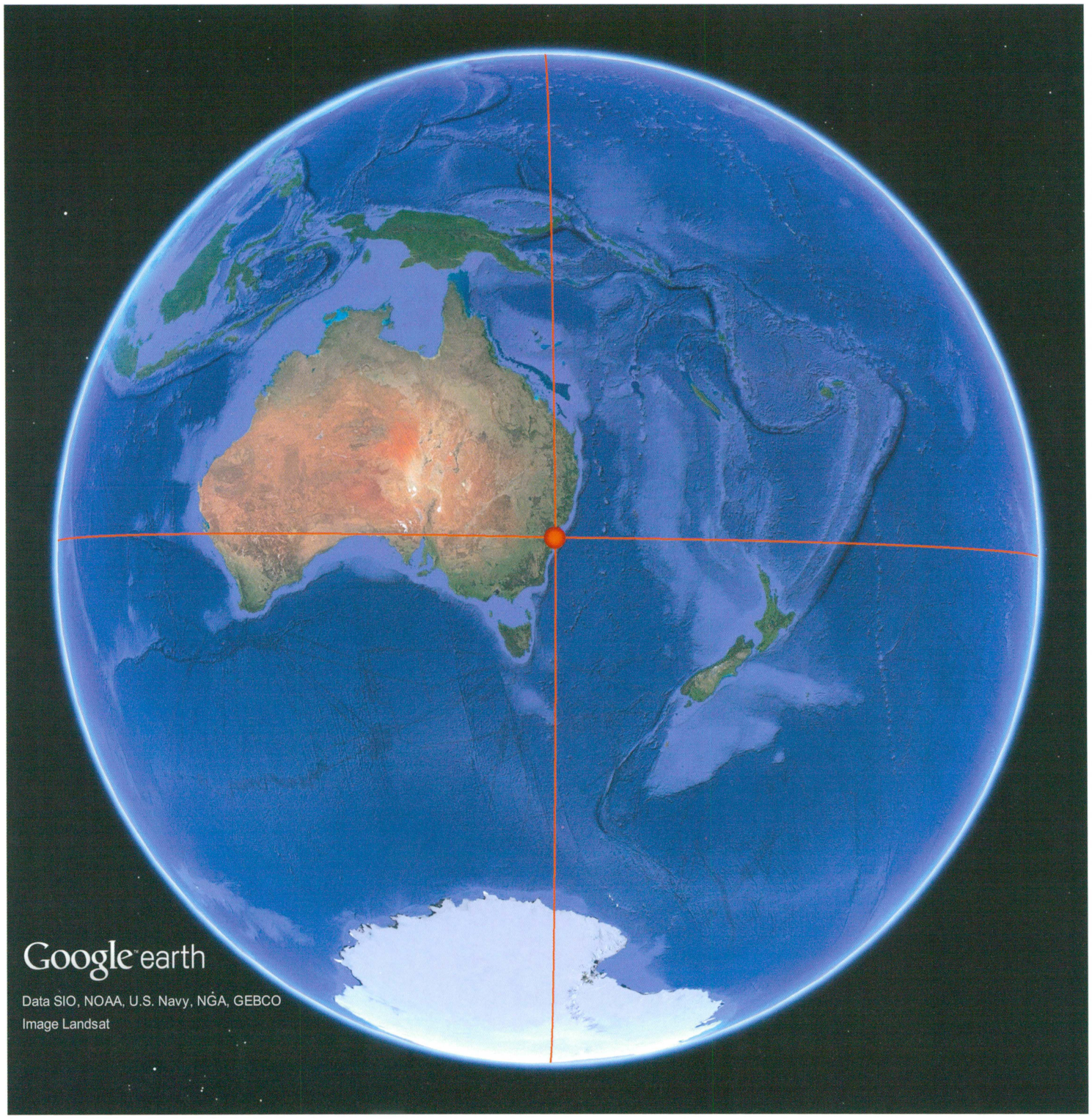
*He was right about Sydney being half of it —added Twain. It would be beautiful without Sydney, but not above half as beautiful as it is now, with Sydney added. It is shaped somewhat like an oak-leaf —a roomy sheet of lovely blue water, with narrow off-shoots of water running up into the country on both sides between long fingers of land, high wooden ridges with sides sloped like graves. Handsome villas*

## Half and Half, Harbor and City



South Head

World map centered in Sydney. Google earth. Data SIO, NOAA, U.S. Navy, NGA, GEBCO. Image Landsat




| Km from Sidney | |
|---|---|
| 2,157 | Auckland |
| 5,505 | Jakarta |
| 6,262 | Manila |
| 7,364 | Hong Kong |
| 7,529 | Bangkok |
| 7,818 | Tokyo |
| 8,161 | Honolulu |
| 8,942 | Beijing |
| 10,422 | New Delhi |
| 10,831 | Cape Town |
| 11,791 | Buenos Aires |
| 11,814 | Anchorage |
| 12,066 | Los Angeles |
| 12,791 | Lima |
| 12,962 | Mexico |
| 14,480 | Moscow |
| 14,937 | Istanbul |
| 15,880 | New York |
| 15,937 | Oslo |
| 16,082 | Berlin |
| 16,984 | London |
| 17,670 | Madrid |
| 18,164 | Lisboa |

*are perched here and there on these ridges, snuggling amongst the foliage, and one catches alluring glimpses of them as the ship swims by toward the city.*

*The city clothes a cluster of hills and a ruffle of neighboring ridges with its undulating masses of masonry, and out of these masses spring towers and spires and other architectural dignities and grandeurs that break the flowing lines and give picturesqueness to the general effect* [63:6].

## The Harbor, Raison D'être

In fact, the harbor constitutes the raison d'être of the city and everything that is constructed in it is directed, conditioned or focused towards the sea. Its presence is the requirement, its view the objective and its closeness the main source of value of that which is built.

The city extends with streets, roads and piers looking for its proximity and rises with towers to enjoy its view. Numerous ever-growing bridges cross its estuaries to bring their shores together, in competition with the ferries, whose jetties are the focus of the city's expansion. But, although the sea connects the city with the world, the distances remain enormous.

## From Sydney, Everything Is Far

As pointed out at the outset, it does not seem right to say that Sydney is far from Europe, America, Africa or Asia, because the question of remoteness must be posed from the city itself. If we trace a distance chart from Sydney to other major cities following the maximum circle air route, the closest relevant city is Auckland, with a million and a half inhabitants, at a distance of 2,157 km, equivalent to slightly less than the distance between Madrid and Copenhagen.

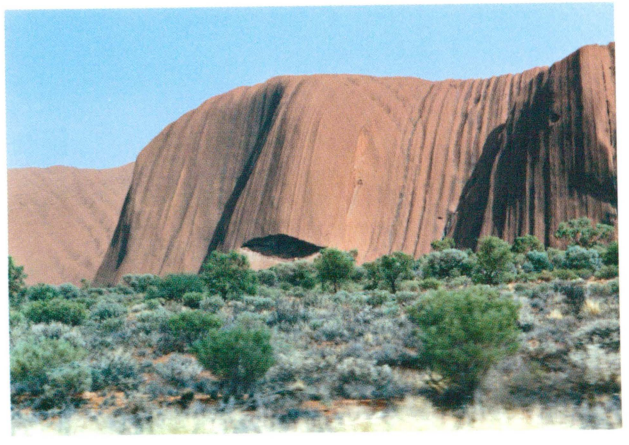
More than 5,000 km away are some cities in Indonesia and it is necessary to surpass 7,500 km to find the coastal cities of the Asian continent, like Hong Kong, Bangkok or Beijing. It is necessary to travel more than 10,000 km to reach Cape Town, New Delhi or Buenos Aires, while European or American cities require more than 15,000 km, with a necessary stopover for any flight, except in a few highly frequented routes.

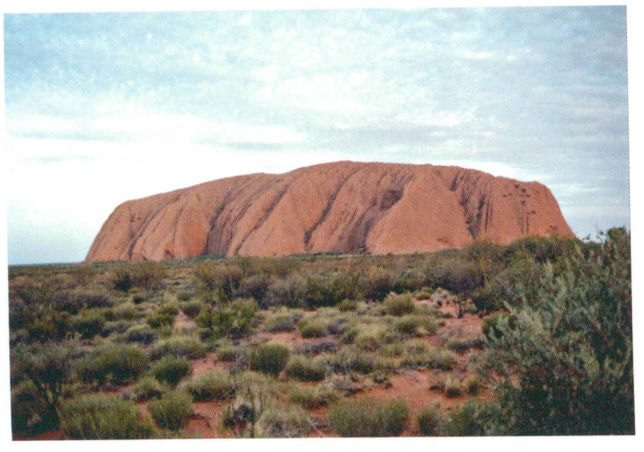
## The Outback

In addition to being far from the other continents, there are few cities nearby. Sydney is located at the southeastern end of a large continent and three quarters of any circle drawn from the city are in the ocean or in Antarctica. That is to say, there are no populated territories of a certain entity outside Australia in that sector, even if the radius is increased, except New Zealand. The question is compounded when one looks at the remaining quarter of the circle where the whole continent is situated, for there are only Melbourne and a few other small towns situated on the coast, and inland there is only the immense outback, the desert that occupies the whole center of Australia.

There is a feeling of emptiness, Stefan Hertmans says, that *begins the moment you start flying over the outback for hour after hour, the monotonous landscape intersected by heat and vague dream lines, the empty heart of this continent, like a huge deserted square around which the cities have assembled like buildings and through which the central emptiness acquires a meaning that cannot be found anywhere else* [32:22].

Many great authors have described in their own way *this experience of a fathomless space-time in Australia, fascinated by the constant threatening disintegration of the meaningful context in a terrifying emptiness that Westerners find difficult to comprehend*. Because what Sydney is about is *not a matter of the emptiness of the comfortably absent-minded look... it is about the gigantic emptiness that nudges you in the back, the*







Ayers Rock [Taken by the author in 1993]

## The Empty Heart

*emptiness which from the centre of this hot continent has, as it were, banished the cities to the coasts* [32:25].

At the center of this enormous void there is a large rock that does not quite reach the status of mountain. It is called Ayers Rock, and it has a magical strength that pushes everything towards the coast, able to irradiate the continent towards the world. But it is so strong that it does not leave anything nearby and it only stops when it gets to the sea. According to Hertmans, this pressure feeds certain feelings in the Australian: it is *not an urge towards a salutary final destination, but an attempt to escape an inland underworld*.

## Plenitude and Remorse

It is like some sort of remorse that is transferred to its inhabitants, *like an almost repressed sense of guilt. It means, among other things, that through the well-meaning and compensatory concern for the declining aboriginal culture, this society remains inexorably bound by a colonial feeling of guilt, which is precisely what it is trying to escape from: as of in the emptiness of the outback there is a huge glowing mirror into which no one can bear to look. They once came ashore here as forced labourers with the guilt of criminals, acquired in the old world, and gradually they have incurred another guilt, that of a new world, that of the subsequent colonialism and its genocide* [32:26].

But the sea can do everything and it corners these feelings, so that the coastal inhabitant lives and communicates joy and kindness, corresponding to the transformation of the void of the *outback* into the fullness of the coastal landscape, immediately perceived by the visitor. But that remorse mentioned by Hertmans remains in the background and comes to light, in unpredictable ways and occasions, along the thread of a reference or comment in the middle of a conversation, which seems trivial to the visitor but is hurtful to the native.

## Fumes of the Outback

Something similar happens in the physical world, with those sudden waves of heat shed by the desert wind over the city. Sometimes, after a pleasant morning with sea breezes, Sydney's air becomes dry and hot, with temperatures above 45 ° C for a few hours, as if the *outback* fumes were taking over the streets.

Mark Twain recalls one of these thermic episodes: *The wind, which had been blowing all the morning from the NE, increased to a heavy gale, and I shall never forget its withering effect. I sought shelter behind a large gum-tree, but the blasts of heat were so terrific*



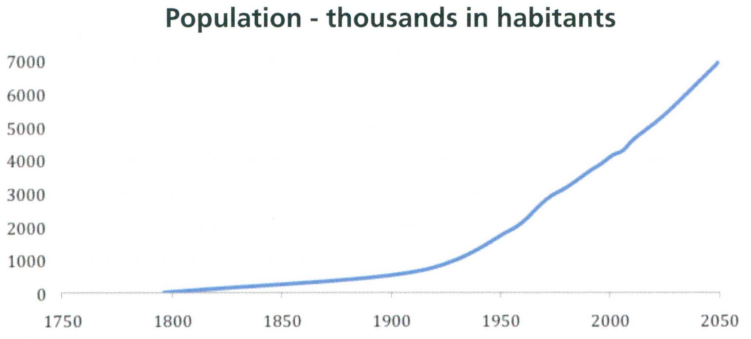
Entrance to the bay from Sydney Tower

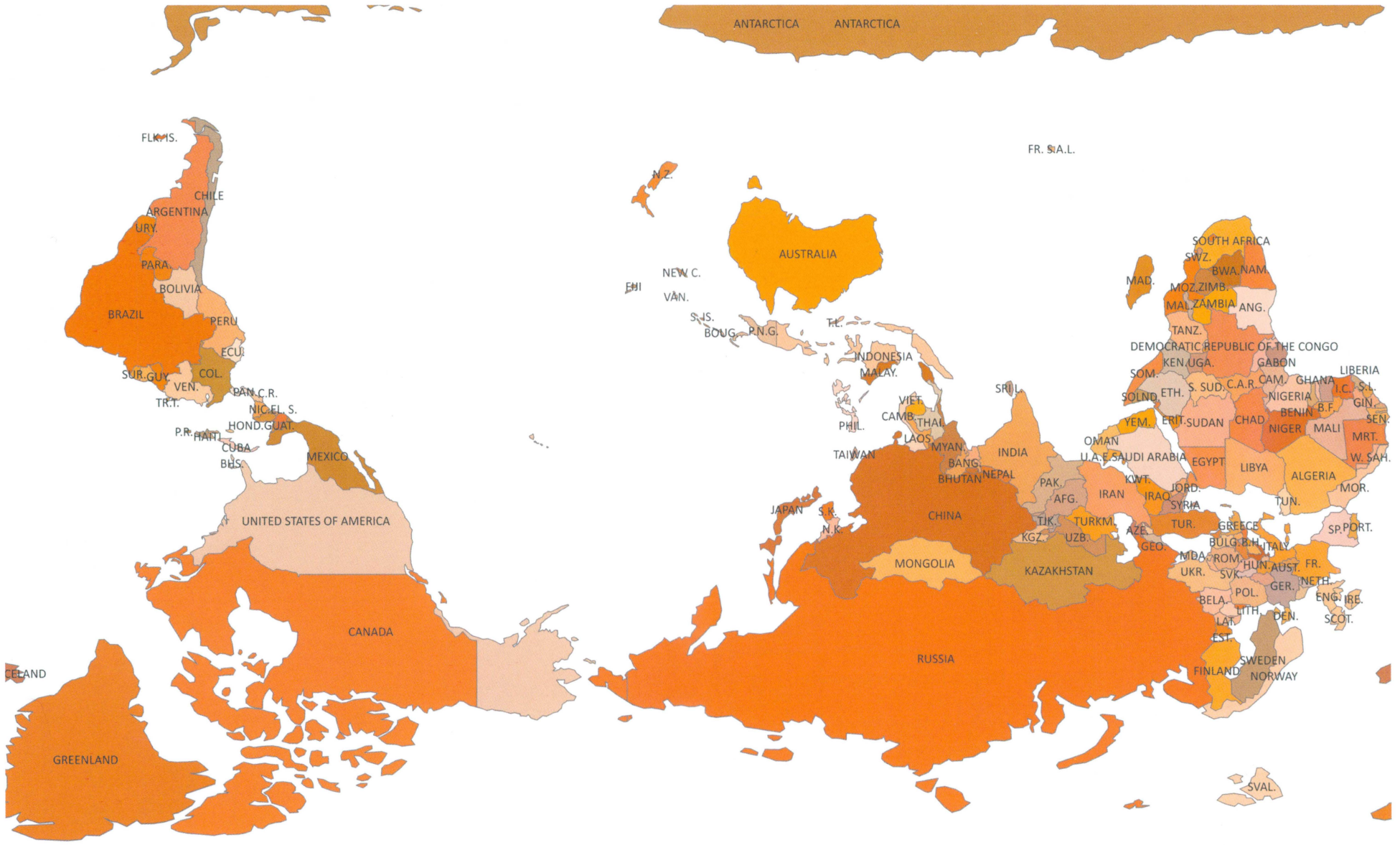
*that I wondered the very grass did not take fire. This really was nothing ideal: everything both animate and inanimate gave way before it; the horses stood with their backs to the wind and their noses to the ground, without the muscular strength to raise their heads; the birds were mute, and the leaves of the trees under which we were sitting fell like a snow shower around us. At noon I took a thermometer graded to 127°, out of my box, and observed that the mercury was up to 125°.* [Later]... I found the mercury had risen to the top of the instrument and had burst the bulb [63:10].

## Antipodes and Suggestions

Then there is the idea of the antipodes on the globe. In fact, the concept of antipode entails remoteness, it implies the furthest possible place to which one can travel by any route according to a maximum circle. It takes the same time to get there via Los Angeles, Singapore or Buenos Aires. The antipode of Sydney corresponds to a point located to the west of Spain - whose exact antipode is New Zealand - and a little towards the north of the Azores Islands.

The travel time and the indifference of the route function as lure of remoteness. Going to Sydney is going to the end of the world. In *Flight 714 to Sydney* [58], Tintin leaves Jakarta and never makes it to Sydney, but the city is used as a destination to suggest remoteness in the hijacking of a business plane bound to land on an






Australia Upside Down World Map.

## Upside Down

imaginary volcanic island. Hergé relates a classic adventure with the backdrop of a volcanic islet on a trip to the end of the world.

However, Sydney is not a faraway city in time. It is undoubtedly a contemporary, modern city with territorial development and civic standards comparable to any large Western, European or American city. Little or perhaps nothing in Sydney resonates as anachronistic, nothing seems out of season or futuristic.

That distant reality is fed in Europe by multiple suggestions: first Sydney is in the southern Hemisphere, where everything works upside down, is upside down. When one looks at the sun in Sydney, the star points to the north and moves from right to left, unlike Europe or America: this must be taken into account when looking for a shade.

A map with the northern Hemisphere below and the southern Hemisphere above, named in Australia *Upside Down World Map*, shows how potent these routines are and how difficult it is for us to represent the world from the opposite viewpoint. In this map, moreover, the central meridian does not pass through London but through the capital Canberra, in the same practical longitude as Sydney. With this, Australia is up and centered on the map, not in the lower right corner where we are used to seeing it in the standard planispheres.

## Of Sailors and Travels

### Captain Phillip's Mission

The discovery of Australia by Captain James Cook in 1770 (see box) provided the English government with a great opportunity. In the 1780s, the English government had a serious problem in the overcrowding of prisoners. The prisons and prison ships were overcrowded and, after the proclamation of independence, the United States refused to continue receiving remittances of convicts. The possibility of using the land newly discovered by Cook to found a new penitentiary colony became the only option and it was decided to colonize Botany Bay with prisoners.

Captain Arthur Phillip (1738-1814) was the man chosen to direct the expedition and govern the new colony. He had embarked at the age of 16 to fight in the Seven Years' War against France and was promoted to lieutenant three years later. But he retired at the age of 25 after the war and lived as a small rural aristocrat until 1770, when he reentered active duty. In 1774, he joined the Portuguese navy, then at war with Spain, and as captain of a Portuguese ship he transferred 400 prisoners to Brazil. It seems that this service convinced Lord Sydney that he was the most suitable candidate.

### The First Fleet

On August 13, 1786, the British Secretary of State Lord Sydney instructed the Admiralty to prepare the fleet. There were a total of eleven ships, but only two of them were warships, the flagship Sirius and the brigantine Supply.




*Pacific Ocean*
by Abraham Ortelio, 1589[2].



Statue of James Cook in Hyde Park

## The Late Discovery of James Cook

Distance delayed its discovery until 1770, some 127 years after the discovery of New Zealand, although much of the Australian coast is closer to Europe, the origin of the exploration voyages. The Australian continent was far from the known routes to the better-known Indonesian islands, from where Abel Tasman left when he first reached New Zealand.

James Cook's first voyage (1768-71) was a combined expedition of the Royal Navy and the Royal Society to the South Pacific Ocean aboard HMB Endeavour from 1768 to 1771. It was the first of three trips to the Pacific in which Cook Was the commander. The objectives of this first expedition for the Royal Society were to observe the transit of Venus in front of the sun which would take place on June 3-4 of 1769. King George III agreed to finance the trip and the Royal Navy took advantage of it to look for evidence of a "land of the unknown south" above latitude 40.

After long negotiations, the Royal Society accepted the Admiralty's proposal to put James Cook in charge, a navy officer with mathematical and cartographic knowledge, who was promoted to lieutenant and appointed commander of the expedition. Funding banks authorized the addition of astronomer Charles Green and botanist Joseph Banks, accompanied by seven others.

The ship arrived on time at the Venus observation point and the scientists could observe the crossing of Venus, but their measurements were so discrepant that the result was not considered conclusive. In September 1769 the expedition arrived in New Zealand, discovered 127 years earlier by Abel Tasman, and spent the next six months plotting the coast of the island, before resuming its voyage to the West. In April 1770 they became the first Europeans to reach the east coast of Australia, when they landed in a bay they called Botany Bay because of the large number of new species found in it by scientists.

The expedition then continued north along the coast of Australia and was about to sink after colliding with the Great Barrier Reef. In October 1770, the heavily damaged Endeavour entered the port of Batavia, in the Dutch East Indies, with its crew forced to keep the secret of the lands they had discovered. The voyage resumed at the end of the year, doubling the Cape of Good Hope in March 1771, and arriving to England on July 12 after almost three years of expedition. The year following his return, Cook undertook a second trip to the Pacific, that lasted from 1772 to 1775, and a third and last one from 1776 to 1779[3].

Recently, it has been pointed out that James Cook used a cartography kept in Manila by Spanish sailors to determine his travels. The capture of the city by



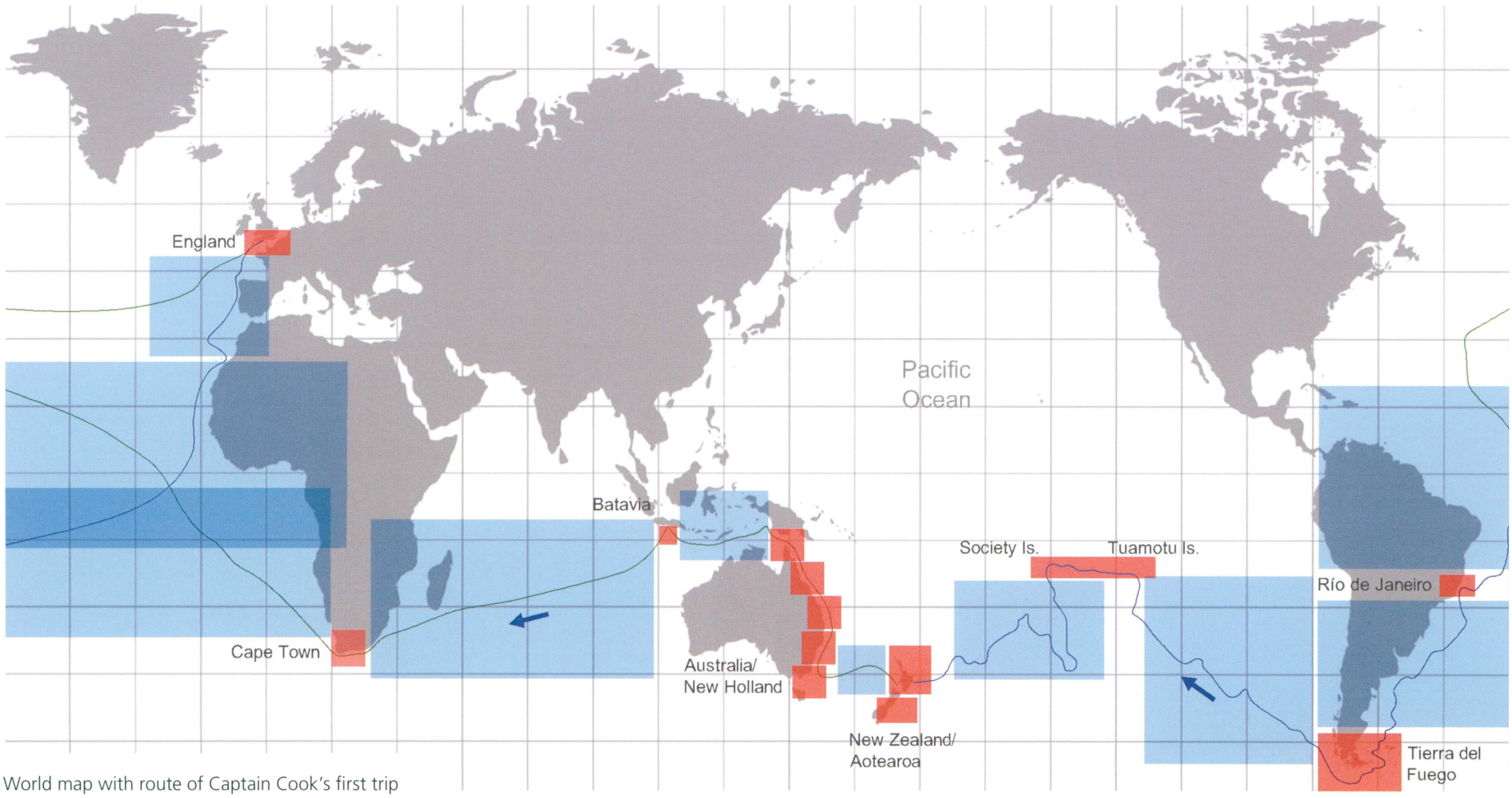
A view of Endeavour River, on the coast of New Holland, where the ship was laid on shore in order to repair the damage which she received on the rock. Byrne, William & Parkinson, Sydney & Hawkesworth, John, 1773. Courtesy of National Library of Australia, nla. obj135951500

the English in 1762 put an end to the presence of these sailors in the seas of Asia and that corner of the Pacific. The last British governor of Manila, Alexander Dalrymple, ordered the taking of most of the funds of the most important documentary and cartographic center of the Pacific.

Dalrymple especially looted the important library of the great Augustinian convent of San Pablo. There he was able to obtain a bibliographical and cartographic treasure: all the mapping work of the Augustinian Urdaneta that was still in use by the Spanish sailors. The essential narrative for Cook's voyage was in the so-called Memorial of Arias, which tells of the voyage of the pilot Juan Fernández in 1576. This Spanish sailor, on a journey from Chile and at a constant latitude of 40°, arrived at a land that according to Dalrymple is undoubtedly the Austral continent.[4]



Replica of the HMB Endeavour in the National Maritime Museum




World map with route of Captain Cook's first trip




*View of the English Colony of Sydney in New South Wales.* Brambila, 1789-1794. Courtesy of the of the Archive of the Naval Museum, Ministry of Defense, Spain, ms. 1724 (15)

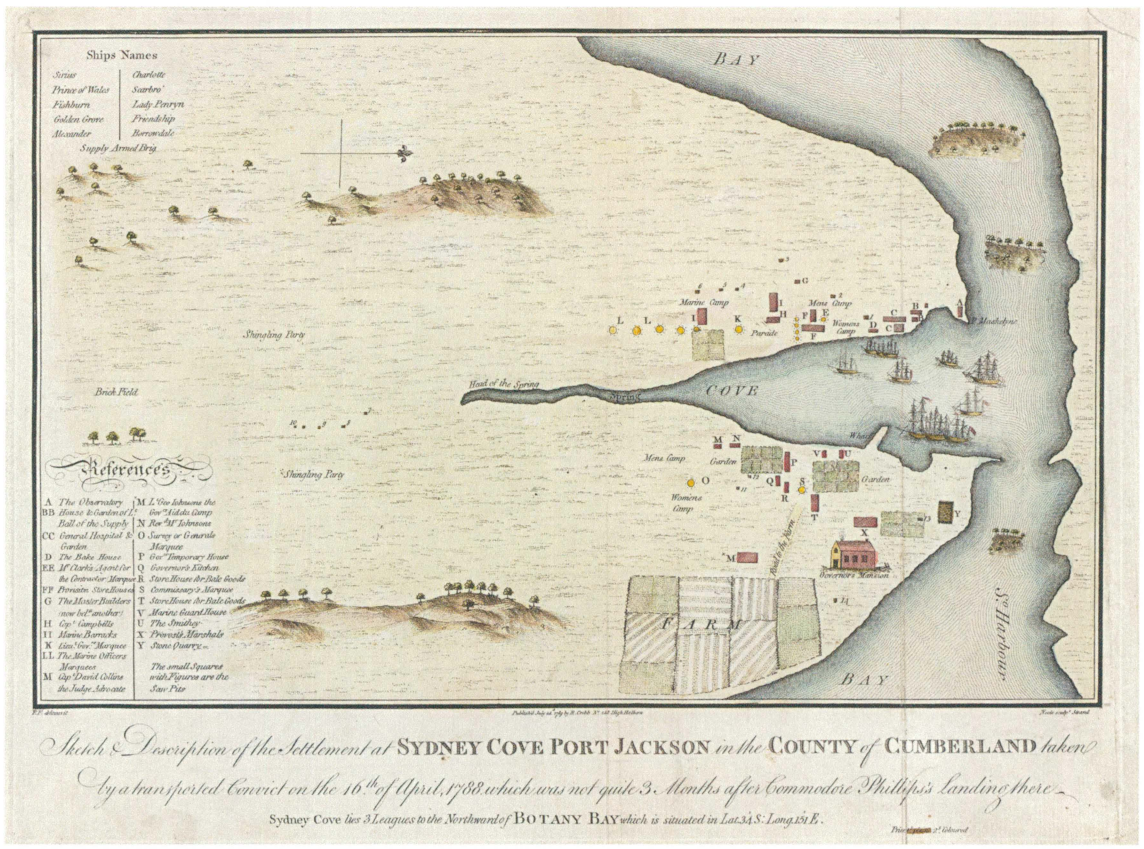
The rest were adapted merchant ships, three supply ships and six transport ships.[5] The navy's committee chose three supply ships and six shipping vessels. Most were fairly new ships; the oldest one had been launched in 1781 and except for the war ships, they were all rented.

All of them were small ships, and, for the crew, the conditions were overcrowded. The largest ship was slightly over 35 m in length and 9.5 m in beam. Nor were they specially prepared for the transport of prisoners, for on the surface of a normal bed slept four men and the height of deck was very reduced, reaching only 1.4 m in some of the ships. They had no light or portholes, lanterns and torches were strictly forbidden to prevent possible fires, and the only ventilation available was through deck hatches, through which they were sometimes allowed out if the weather was good [36:102].

## Prisoners and Supplies

The expected duration of the trip was about six months, but the convicts were taken to the ships two months before departure. Philip despaired of the bureaucracy, making efforts to order enough and adequate foods to combat scurvy, but he got much less than he asked for. He went on to say that, with what they offered him, he would lose half the crew and the convicts. The essential supplies to establish a camp on arrival were equally inadequate: Phillip begged for scythes, cloth for uniforms, razors, fresh meat for convicts, wine for the sick, fumigants, more drugs, without obtaining response. Shipment was delayed for more than two months due to the slowness of supplies.

*The convicts came rumbling down to the Plymouth and Portsmouth docks in heavy wagons, under guard, ironed together, shivering under the incessant rain. The pale,*




Sketch & description of the settlement at Sydney Cove Port Jackson in the County of Cumberland taken by a transported convict on the 16th of April, 1788, which was not quite 3 months after Commodore Phillips's landing there. Fowkes, Francis & Cribb, R & Neele, Samuel John, 1789. Courtesy of National Library of Australia, nla.obj-230578175

*ragged, lousy prisoners, thin as wading birds from their jail diet, were herded on board and spent the next several months below; orders forbade them to exercise on deck until the flotilla was out of sight of land* [36:71]. Before departure 17 convicts had died.

For a time, the idea spread that these convicts were political prisoners, or even dangerous killers, but that was not the case. Half of them were under the age of 25 and practically all of them were punished with excessive penalties for theft and common crimes against property, according to a very strict penal code. Of the 730 known convicts, 430 were convicted of minor thefts, about 250 for aggravated robberies, highway robbers, cattle theft, and the other 50 for fraud, impersonation, forgery, purchase of stolen property and other such crimes.

## Crimes of the Passengers

The particular casuistry is heartbreaking, as a single example chosen from the many included in the excellent book by Robert Hughes illustrates: *Elizabeth Powley, twenty-two and unemployed, raided a kitchen in Norfolk, took a few shillings' worth of bacon, flour and raisins, with «twenty-four ounces weight of butter value 12d,» and was sentenced to hang; but a reprieve came and to Australia she went, never to eat butter again* [36:104].

The fleet of the eleven finally set sail on May 13, made stops in Tenerife and Cape Verde, spent a month in Rio de Janeiro, crossed the Atlantic again, spent another month in Cape Town, went below the 40° parallel south with favorable wind, bad sea and bad weather, and arrived on the Australian coast on January 19, 1788. The voyage of about 15,000 miles had lasted 250 days; in the passage 48 people died, a low mortality rate according to the experts, given the conditions of the trip.




The city of Sydney, bird's-eye view with Circular Quay at centre. Hill, M. S & Samuel Crump Label Co, New York 1888. Courtesy of National Library of Australia, nla.obj-135831957

## Landing Site

The first landing site found by Cook was later considered —particularly by botanist Joseph Banks— as the most suitable place to locate a settlement and a British colonial outpost. However, almost 18 years later, when Captain Arthur Phillip and the First Fleet arrived there to establish the outpost and a colony of convicts, they found that the bay and its surroundings were not up to the promising image they had been described.

Phillip did not like Botany Bay and visited a port a few miles north, which Cook had called Port Jackson, but had not explored yet. He liked the place, established the settlement there and named it Sydney Cove in honor of Lord Sydney. In his journal Phillip wrote: *We... had the satisfaction of finding the finest harbour in the world, in which a thousand sail of the line may ride with the most perfect security* [36:118].

## The First Sight

Upon entering the bay for the first time, Captain John Hunter, Phillip's second-in-command, exclaimed: *the land... may be cultivated without waiting for its being cleared of wood...The woods... resemble a deer park, as much as if they had been intended for such purpose!* The harbor was dazzling for he who saw it for the first time. Phillip's admiration was shared by his officers. In the diary of Arthur Bowes Smyth (January 26, 1788) the satisfaction for the arrival and the aesthetic pleasure are combined, as his transport ship Lady Penrhyn was entering the bay:

*The finest terra's, lawns and grottos, with distinct plantations of the tallest and most stately trees I ever saw in any nobleman's ground in England, cannot excel in beauty those which nature now presented to our view. The singing of the various birds among the trees, and the flight of the numerous parraquets, lorrequets, cockatoos, and maccaws, made all around appear like an enchantment; the stupendous rocks from the summit of the hills and down to the very water's edge hang'g over in a most awful way from above, and form'g the most commodious quays by the water, beggard all description* [36:25].

## The Beautiful Harbor

This attraction grew with the construction of the port and the city, and later travelers admired it even more. In 1895, Mark Twain admires seeing the nooks and crannies of the spacious and beautiful harbor, which he considers as something other than the city: *a harbor which is the darling of Sydney and the wonder of the world*. The port activity added beauty and vital momentum to the bay with its ships.

In his 1906 book, *The Mirror of the Sea*, sailor Joseph Conrad notes the beauty of the harbor seen from the streets and does not fail to point out the aesthetic supplement provided by the ships anchored in its waters: *This was especially the case in Sydney, where, from the heart of the fair city, down the vista of important streets, could be seen the wool-clippers lying at the Circular Quay —no walled prison-house of a dock that, but the integral part of one of the finest, most beautiful, vast and safe bays the sun ever shone upon.*

*Now great steam-liners lie at these berths, always reserved for the sea aristocracy —grand and imposing enough ships, but here to-day and gone next week; whereas the general cargo and clippers of my time, rigged with heavy spars and built on fine lines, used to remain for months together waiting for their load of wool* [11:207].

## Even from the Airplane

Even arriving by plane, the most recent travelers are still dazzled by its beauty. The critic and architect Robin Boyd, author of a book on ugliness in Australia, profusely praised it: *The visitor who arrives first by air... at Sydney sees man-made Australia at its best. He sees indeed an outstandingly beautiful city: none in the world looks better from the air* [24:33].

*The interminable stretch of coastline is intricately eroded by the ocean in this place. Dark blue water within the harbour is clutched by dozens of green fingers encrusted with brown roofs, and in a central patch the grey and white teeth of a commercial centre rise into the hazy air. Even the famous bridge is an insignificant incident in such homogeneous magnificence* [24:34].

## The Look of Science

But there were also more penetrating looks. When the HMS Beagle arrived at Sydney Harbour, in January 1836, the Austral summer had been quite dry and the vegetation was not at all splendorous. Charles Darwin did not consider the bay as landscape, but rather from a scientific point of view, and he wrote in his journal that *'the straight line of yellowish cliff' simply brought to mind 'the coast of Patagonia' and that the 'thin scrubby trees' along the shore 'bespoke a useless sterility.'* From the observation of the vegetation he appreciated right away the lack of a developed soil and its corresponding agricultural weaknesses (see infra, in this chapter) [35:83].

However, Conrad Mertens, his assistant-painter in the Beagle, saw it in a more benevolent way: *The appearance when off the heads is that of a wild and iron bound coast and the entrance that of a gigantic gateway, but the scene changes immediately upon entering to the calm and beautiful. Islands, bays, headlands of no great highs but covered with wood present themselves in succession...* [35:102].

But when the newcomers faced the hard task of building their home and city, the beauty of the estuary began to show its darkest side: *'Tis greatly to be wished these appearances were not as delusive as in reality they are!* was a common complaint.

South Head



## Tension, Hunger and Beauty

It was an uphill battle: *The land was not what it seemed. It looked fertile and lovely, but it proved arid, reluctant, incomprehensible... It was sandy, swampy or full of rocks; fertile topsoil only existed in pockets, and every yard of ground was impenetrably tangled with brush. There were no streams of any size, or lakes or even ponds, and rain simply ran off the meager soil into bogs. Away from the harbor, the brush crushed the eye with its monotony* [36:124].

The desired landscape seemed difficult to build, for one must add to the unpropitious land the inappropriate utensils and the inability of the convicts. Among them there were only two farmers, whose knowledge was not enough to face the existing conditions, and hunger emerged as one of the main concerns of Phillip. *All ranks ate the same monotonous diet of salt meat and leathery johnnycakes baked on a shovel. Thus, food could not symbolize the proper social demarcation between bond and free... The survival of the colony had to preclude all comforts of status... They all lived for five years on the bleak edge of starvation* [36:128].

For this sailor, the city's economy functioned like that of a ship: it produced nothing and was simply waiting for new supplies. When something was lacking, the only possible measure was rationing for all and harsh penalties for the transgressors. Using the powers conferred upon him by the British government, Phillip decreed the maximum penalty for certain offenses. As brood stock was infinitely valuable to the colony, cattle and chicken thieves would be hanged without exception.

**Voyage**
**Economy**

Tensions arose, produced by the patent incapacity of men and stores to make the place, initially understood as idyllic, merely livable. The landscape remained beautiful to the eye, but the country did not allow itself to be inhabited. There was growing awareness that it was necessary to look for more fertile land towards the interior and a possible move of the core of the colony to Parramatta, where




*View of the Parramatta Colony in New South Wales.* Brambila, 1789-1794. Courtesy of the Archive of the Naval Museum, Ministry of Defense, Spain, ms. 1723 (24)




Port Jackson & Middle Harbor also Parramatta & Lane Cove Rivers. Sydney: Lithographed and published by Higinbotham & Robinson, 62 Elizabeth St., 1894?. Courtesy of National Library of Australia, nla.obj-231448119. (fragment to de West)

the land seemed more fertile, was under consideration. But the presence of the harbor prevailed, first on account of its undeniable nautical qualities, but also due to its undoubted beauty.

## The Plot of Parramatta

For five years, hunger was present every day. The first crops were destroyed and the whole yield of the second crop had to be reserved for seeds. There were no draft animals and it took them 15 years to start using the plow. The convicts were so weak that only a third of them could work. Some officers had gardens tended by prisoners, but the main orchard was placed on an island to prevent convicts and desperate soldiers from eating the leaves.

The highest hopes were centered on the government's farm in Parramatta, Sydney's geographic center, where there was a deep layer of vegetation, and where the fields reached the river, which was navigable from the harbor. But its production was insufficient and hunger spread, since the only alternative were new supplies coming by ship. In Sydney only the two ships of the navy, the Sirius and the Supply, remained, since the other nine were rented and departed immediately. The Sirius got lost in one of the attempts to bring supplies.

However, at the end of 1792, the only hope was Parramatta, where Phillip had distributed parcels among the convicted prisoners, dedicating a total of 400 ha of government land and 200 in private hands for agriculture, and leaving a reserve of 1600 ha to cultivate in the future. This agricultural concern and the central position of Parramatta, at the end of the navigable section of the river, gave rise to the creation of a population nucleus, with a second residence of the governor (1790) and some institutional buildings. But it did not seem sufficient and it was necessary to try new solutions.



Parramatta St Johns Church





Brislington House, Parramatta



Lachlan Macquarie Chambers, Parramatta



Old Government House, Parramatta





Views of Parramatta River and Lennox Bridge in Parramatta











1. Brislington House
2. Lennox Bridge
3. St Johns Church
4. Old Government
5. Lachlan Macquarie
6. Rosehill Garden
7. Hambledon Cottage
8. Elizabeth Farm
9. Gasswok Bridge





## Paths to the Mountains: Parramatta River and Road

In the early years of the colony, the easiest way from Sydney to Parramatta was the river, but in those years, navigation in the bay or the possession of a simple rowboat was strictly prohibited, for Sydney functioned as a sort of prison harbor. The departure of any type of boat required the approval of the officer on duty.

Around 1820, a group of people close to the governor built the first ferry: a flat-bottomed barge, now called the *Rose Hill Packet*, to carry people and supplies between Sydney Cove and Parramatta. It was little more than a raft and moved upriver and downriver pushed by tides and currents [35:57].

As the river ceased to be navigable during times of prolonged drought, a parallel road was built between the two cities, back in the day the most important road in the colony, *the backbone of the city*, from the port to the center. The current Parramatta Road runs today through a desolate and charmless landscape, full of car depots [9:132].

In January 1836, Charles Darwin went up this road to the Blue Mountains and recognized it as *an excellent macadam road*. He preferred to use the road instead of boarding the river, the usual way of transporting grains to the city and goods upstream.

He was tired of ships, after three long years spent in the small HMS Beagle, in which he had sailed through the three great oceans of the planet, visiting Cape Verde, Rio de Janeiro, Montevideo, Buenos Aires, Patagonia, Tierra del Fuego, the Falkland Islands, the Strait of Magellan, Chile, Peru, the Galapagos, Tahiti and New Zealand, before arriving in Australia.

After visiting so many coasts, he had a real interest in those distant mountains and in the green pastures for sheep that surrounded them. He was convinced that *there was no agricultural future for the colony. The soil was poor and the pasture 'thin.' The harbour, conversely, represented civilization and a manufacturing and commercial future, one oriented to the sea rather than the dry interior: Possessing coal, she always has the moving power at hand. From the habitable country extending along the coast, and from her English extraction, she is sure to be a maritime nation* [35:84].

Going up the river meant heading west, following the drive towards the interior that pushed the growth of the city. Since its origin in *The Heads* that marked the entrance to the bay, the natural progress of any sailor is to head upstream as long as the depth of water allows. Parramatta was the final point of the sailors' and the beginning of the adventurers' road and, still today, it maintains that character of threshold that enriches the route by the river.

As one goes upstream, the cliffs, the bushes and the big trees disappear, to give way to the riverside vegetation, the agricultural fields, the farms and the isolated industries. The breeze that prevails in the bay loses freshness and marine aroma, the atmosphere calms down and everything acquires a different rhythm. Traveling upstream is always a rite of discovery, no matter how many times one has done it before. The banks soften under the reeds, the waters become shallower and the ferries have to go slower.

Meanwhile, the bridges mark the road and punctuate the progress, showing fewer spans, each time smaller. From the majesty of the steel arch of the Harbor Bridge, one goes under the stretched concrete arch of the Gladesville Bridge and, from there, many instrumental bridges follow, almost always of iron or concrete beams, both straight and in lattice, and more dense or redundant if they are old, as opposed to the simplicity of the more modern spans. The journey ends, unmistakably, facing the serene, and unique horseshoe stone arch of Lennox Bridge.

The journey in the opposite direction is lived as a remembrance and recognition of what has already been seen, with the sadness of the journey that ends or with the regret of improbable amazement. On return journeys, people stop looking.

It is worth embarking, but always upstream.



Parramatta River



## Wood and Fishing, New Conflicts

At first, Phillip thought that the exploitation of wood, necessary for construction, could also serve to produce poles and masts to repair the ships. Again, the promising nature became a fiasco: the wood was deceptive, lacked flexibility and only served to build cabins and as firewood. The manufacture of linen was also tested, to supply ropes and candles for ships, as well as clothing for settlers. But knowledge was lacking, and when Phillip's requests were met and a skilled convict was brought in, productivity was very low and linen manufacture as industrial activity proved unfeasible.

On the other hand, the attempt to emulate the Aborigines with fishing managed to decimate the bay in a few months. Aboriginal fishing gear was proportionate to subsistence catches, but the hunger of the convicts outweighed their prudence. The attempt provoked a new reason for confrontation with the natives, something that Phillip wanted to avoid at all costs.

## Coexistence with the Aborigines

The relation of the first British visitors with the aborigines was not easy and only a meticulous mixture of cruelty and cunning allowed a controlled coexistence. In a careful and well-summarized section of the Sydney City Museum, the four main stages of the British-Aboriginal relationship are labeled Kidnapping, Rescue, Reconciliation, and Resistance. In each of them arises an aboriginal figure especially meaningful to the British: Bennelong, Colebee, Naimbaree, Barangaroo, Daringha and Pemulwoy are some of the names, since then associated with specific places of the history of the city.

After several bloody skirmishes, Phillip resorted to the kidnapping of one of the Aboriginal leaders, as a means of guaranteeing the food supply by the aborigines and with that a certain tranquility. It was a truly crucial matter for the settlement, for as soon as the food was scarce, the convicts and even the troops found no reason not to rebel against the established power. He first captured a man named Aranbaroo, who died months later in the smallpox epidemic of 1789.

In November of that year, Phillip captured Woollaravarre Bennelong (1764-1813) when he was about 25 years old and described as 'resolute' and of 'good stature.' Bennelong escaped shortly afterwards and in a new avenging confrontation in Manly, wounded Phillip in the shoulder. That circumstance was cleverly redirected by Phillip into a lasting friendship between the two: Bennelong gave Phillip his first name and the governor put his name to the best known point of the city, where later the headquarters of the Opera House would be, and he built him a house there, very close to his own residence. His son was adopted by the Reverend William Walker and baptized as Thomas Walter Locke.

## Landscapes of Plunder and Domination

Under the generic name of Aborigines are known many different cultures established throughout Australia, with about 250 languages spoken at some point in history. There are more than 30 different clans in Sydney's vicinity, each with customs linked to specific areas, and with songs, dances, rituals, tattoos and different designs.

The names of the tribes and the lands where they were established have been collected under different spellings, making it very difficult to document their settlements. The first toponyms were collected by the First Fleet officers and have been the subject of corrections and additions in later studies. In this region of Southeast Australia, the Aborigines seem clearly sedentary, living off fishing and farming. In more arid regions with greater settlement difficulties, they appear to have a more nomadic character, as Chatwin points out in his work *The Songs of the Land* [10].

The Aboriginal cultures encountered by the British in 1789 in the Glandigal region —later, Sydney— belonged to a sophisticated and culturally diverse population whose ancestors had lived there for about 40,000 years. These were maritime coastal populations, settled on the banks of the estuary and their small tributaries and capable of fending for themselves well in sheltered waters, and with difficulties in the open sea, where their rowing canoes had little chance of overcoming the high ocean waves. But they were not prepared to coexist with visitors and to face aggressive events.

## Smallpox Epidemics

Just fifteen months after the arrival of British officers and prisoners, a smallpox epidemic —probably propagated by the visitors— killed a large part of the population, between 50 and 90 percent of all Aborigines. The Sydney epidemic reached its peak in the summer of 1789, practically on the very date of the beginning of the French Revolution: the famous capture of the Bastille occurred on July 14, 1789.

Careful official doctrine speaks of the survival of the Aboriginal population, thanks to its 'cultural resilience' and its 'astonishing adaptability.' According to official doctrine, Aborigines today form a 'dynamic part' of the town's population and maintain 'spiritual connections' with the land. Although the first is not especially noticeable by the current visitor, the strong effort of the public powers to maintain cultural ties with a local history prior to the invasion of the convicts is notable. Cultural connections with the earth are emphasized in names and cautious remarks, and they flourish with their peculiar onomatopoeic sounds of syllables and vowels repeated in every word: as in the case of Woolloomooloo, the cove to the south of Sydney Cove.

## Exile and Suffering

In the book *Convicts: Transportation & Australia* [6], Michael Bogle locates the Australian experience with the prisoners in the context of the dark history of exile and human suffering. Written history begins in ancient Egypt and is related to recent images of concentration camps or forced labor, to show the circumstances of the founding of the country.

According to Bogle, the Australian colonies would never have been founded if the North American revolution had not forced prison authorities to find alternative venues to discharge the loads of convicts produced in British courts.

At first, the British tried to continue sending their shipments of convicts to the new independent United States, but they returned the ships and their cargo. *In this sense*, continues Bogle, *Australians are also children of the American Revolution* [6:X].

## Transportation and Punishment

In the 80 years following 1788, more than 160,000 souls were transported from the UK to the Australian colonies. In this way, they escaped the 'dance of death' deeply appreciated by the masses of Tyburn or Newgate, but their fate was almost as terrible.

In a state of chronic hunger, they were forced to work in the construction of roads and public buildings, making bricks or tiles, sewing clothes or making shoes. Their life was governed by severe laws with frequent whip punishments. The first convict executed in Hyde Park Barracks, in Sydney, in 1789, was punished for stealing food. At that time, the punishments of the surveillance troops of the convicts were also brutal: a year later, six marines were executed for similar reasons.

## Harsh Punishment

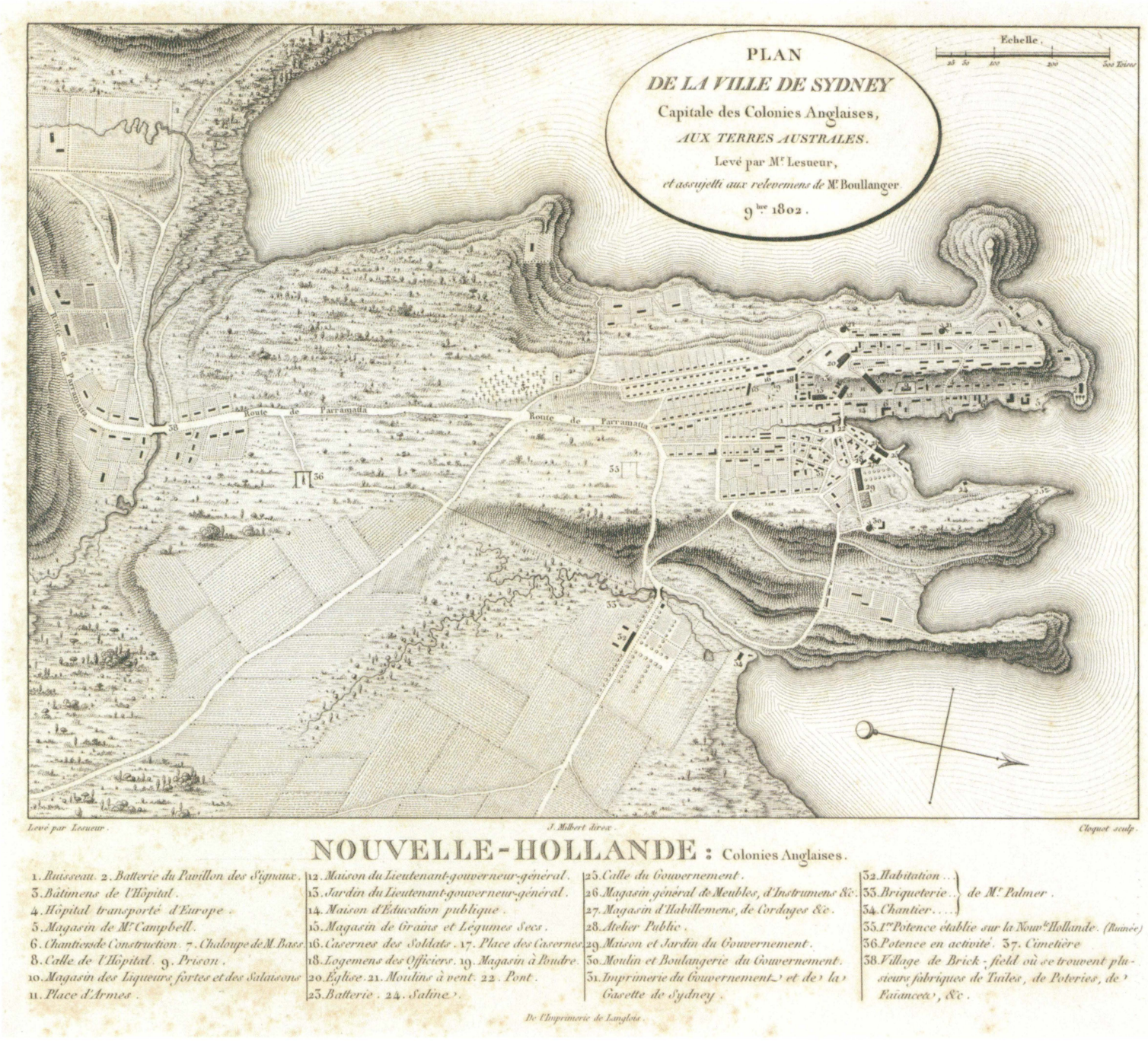
In his *Wayward Tourist*, Mark Twain compares the harshness of punishments in the colony versus those of the metropolis: *when I was in London twenty-three years ago there was a new penalty in force for diminishing garroting and wife-beating —25 lashes on the bare back with the cat-o'-nine-tails. It was said that this terrible punishment was able to bring the stubbornest ruffians to terms; and that no man had been found with grit enough to keep his emotions to himself beyond the ninth blow; as a rule the man shrieked earlier... But humane modern London could not endure it; it got its law rescinded.*

*Twenty-five lashes! In Australia and Tasmania they gave a convict fifty for almost any little offense; and sometimes a brutal officer would add fifty, and then another fifty, and so on, as long as the sufferer could endure the torture and live* [63:14].

## Scarce and Inadequate Supplies

Beyond the disciplinary regime, when Phillip wanted to start building more than temporary shelters, the inadequacy of the utensils carried by the First Fleet and the lack of crafts useful for construction among the prisoners became evident. Among the many accounts of his difficulties, Peter Carey's is the most graphic and direct:

*Phillip now faced the daily question of putting up a shelter, any shelter, that would not collapse on its inhabitants. And now it became clear just how poorly provisioned this settlement was. Soon the governor would write to Lord Sydney.*




Plan de la ville de Sydney, capitale des colonies anglaises aux terres australes, levé par Mr Lesueur et assujetti aux relevemens de Mr Boullanger, 9bre 1802; Cloquet sculp.; J. Milbert direx. Cloquet, Jean Baptiste Antoine, -1828. Courtesy of National Library of Australia, nla.obj-150873690

## No Lime, No Bricks, No Skills

*There was no lime and so no mortar could be made*. At first, clay suitable for making bricks was not found, but even when the clay was found and the settlers busied themselves extracting lime from the shell middens on the foreshores, *the tiles were porous and when they became heavy with water the roofs collapsed, and so on and so forth. The military lived in daub and wattle shanties* [9:107-103].

The same happened with the other trades: bakers, blacksmiths, farmers and other knowledge essential for the work of colonization were lacking. The few convicts with some skill lacked instruments and tools to exercise it in a minimally effective way. The only solution to all the deficiencies depended on the arrival of the next ship and the

attention given by the metropolis to the requests of a colony of prisoners, in fact a prison locked with bars of distance.

### Vacuum of Power

In 1792, Phillip considered his mission achieved and returned to England, but the next Governor with authority, Lachlan Macquarie, did not arrive until 1809. In that intermediate period of 17 years began the appropriation of wholesale land by powerful and wealthy individuals, characteristic of the development of Sydney well into the nineteenth century. Officers and public servants took over as many lands as they wanted anywhere in the city, while the streets took shape circumventing them as they could.

True medieval fiefdoms arose, among them *The Farm*, of the commissary Palmer in Woolloomooloo. The land was free, as was the workforce of the convicts. It was a period that was *colorful, dark and brilliant, retrogressive and progressive, full of anomalies; fortunes were made and degradation heaped on degradation* [41:7].

### Arrival of the Police

Phillip's departure in 1792 included the withdrawal of the NSW-New South Wales Marine Corps, which had arrived with the first fleet to guard the prisoners in the voyage and in the creation of the penal colony. Starting in 1789, a new permanent regiment had been formed in England to relieve the Marines, the New South Wales Corps, consisting of a thousand troops, organized in three companies under the command of Major Francis Grose.

The regiment was staffed by half-paid officers, soldiers on parole from military prisons, rioters and fortune-seekers, who saw the new colony as a possible outlet for their difficulties and aspirations. These troops began to arrive at Sydney with the second fleet in 1790 and Grose arrived in 1792, to occupy the position of lieutenant of the governor. He also assumed the command of a fourth company, formed by the marines who had arrived with Phillip that preferred to remain in the city.

### The Rum Corps

Lieutenant Grose relaxed Phillip's ban on importing rum, and the following governors were not able to control it, despite the use of this new police force and the British attempts to enforce surveillance. The generic denomination of 'rum' included all other alcoholic beverages and, with the chronic shortage of coins of the colonies, rum became currency of exchange. The interruption of the rum supply generated a true 'Rum Rebellion' in 1806, which could only be stifled by a pact with the NSW Corps.

During that process, NSW Corps officers took control of the monopoly and used it for their own benefit, thereby receiving the name of The Rum Corps. When the colony was already established, more respectable settlers arrived and this body of police was the one in charge to guarantee the coexistence with the convicts and the natives, who were very few.[6] The behavior of the Rum Corps left a trace in the city, as Mark Twain recalls:

*Meantime, they [the officers of the Corps] had spread intemperance everywhere. And they had squeezed farm after farm out of the settler's hands for rum, and thus had bountifully enriched themselves [...] In one instance they sold a man a gallon of rum worth two dollars for a piece of property which was sold some years later for $ 100.000.*

## Glimpses of a City

Phillip's efforts propitiated the first glimpses of a city, arising from public works and spaces as the only assets shared by an assorted set of settlers. Sailors, marines, and convicts abounded. Soon, some convicts began to perform relevant social functions, associated with their trade or knowledge prior to their punishment. Over time, many convicts were released and established themselves as settlers or citizens, in parallel with free immigrants.

The construction of the first roads, fountains and public buildings was essential for this population to share the idea of a city. Captain Phillip saw it this way, but his successors were busy solving difficulties, suppressing excesses and controlling the outrageous conduct of such heterogeneous inhabitants, and did not maintain his efforts.

### Sailors Unable to Build

But that contingent of officers, sailors, and marines, capable of crossing oceans and reaching Australia, had no means or personnel to build a city, or even a minimally endowed encampment. The supplies shipped in from London were mainly oriented to the needs of the ships in their passage, and not so much to the construction of a colony. The deficiencies were enormous and they had to ask for better axes, better shovels and better spades, as the ones they had were the worst ever seen. *In all his prisoners there were but fourteen carpenters 300,000 nails but the trees were alien and seemed, to English eyes, unsuitable. The timbers were too hard, or twisted violently in the sun... There was no lime and so no mortar could be made. At first there seemed no clay suitable for bricks but even when clay was found and the settlers busied themselves extracting lime from the shell middens on the foreshores, there was not, in all that expensively provisioned fleet, a single man with any real experience of making bricks* [9:101].

However, bricks were made... *but they crumble in your hand like tea cake. They are soft and sandy and fired at far too cool a temperature... The times were hard, and making bricks was the worst job in the colony and carting the bricks was an extreme punishment. There were no horses or oxen and only three carts and the twelve convicts were in the harness pulling three-quarters of a ton.* They also made roof tiles, *but then tiles were porous and when they became heavy with water the roofs collapsed. The military lived in daub and wattle shanties. Two years after Phillip's first grand vision the houses and public buildings were springing up without regard for any plan at all.*

### Encampments and Plans

The first encampment, still half-wild but already named Sydney by Phillip, had been organized around the flow of the Tank Stream, located at its center. *Tents and huts were lined up north-south and east-west, drawn up in ranks facing the parade ground, with the convict's tents in long neat rows close by.* The convicts and marines were located to the west, whereas the governor and his officers took possession of the east,[7] *introducing a class distinction that you can see in Sydney 210 years later* [9:99].

Phillip certainly had a first plan of the city when he distinguished in his writings a main street of 60 ms width, directed towards the house of the governor, the criminal court, and the barracks of the guard. It included the willingness to include other streets *in such a manner as to ensure the free circulation of air* and without permitting permanent buildings outside of the laid down plan.

## Sailors' Streets




Parramatta River

But, *just a few months after Phillip described his town-plan the grand design seems to have given way to workaday expediency and there was a dirt track meandering from the governor's temporary quarters to the lieutenant governor's house and then pursuing a desultory course to the hospital buildings on the western side of the cove* [9:100].

The cities of Sydney and Hobart were founded by sailors who, as Susan Marsden notes, placed *their straggle of streets close alongside deep waters*, so that city and harbor were one entity. There are still wharves for ocean-going ships at the end of George Street in Sydney and Elizabeth Street in Hobart, although the operations of Sydney and Hobart as ports have changed dramatically in the last 20 years [43:15].

In both cities, as is happening all over the world, port activity has surpassed the human scale of the city, and it has been necessary to place it far away from it. For many centuries, ships had brought in numerous crews, and their merchandise was loaded and unloaded with the help of another large number of stevedores. The operation required days or weeks, leading to a profuse use of the city and its services. But the increasing size of the new ships and the search for efficiency in their cargo loading and unloading operations demanded large cranes and surfaces next to the docks and turned the port operation into something not only alien, but also annoying to the citizen. As a result, commercial ports were moved away from the urban centers and the former docks remained at the service of leisure and of passenger ships.

As a result of the vacuum created by Phillip's departure, the city received a legacy of narrow, twisting streets, some of which went nowhere, such as William Street winding between large estates on both slopes of Woolloomooloo Hill. Also the character of the city was affected by these behaviors, drifting towards the accidental city, as pointed out by Paul Ashton [3: 9], in which the rules of *laissez faire* prevailed, with incremental developments and setbacks, in a race between chaos and urban planning.

## Chaos and Interests

It is not so much a city without law, without planning, but rather the confluence of very diverse interests without a unified previous vision of the final aim. Every piece of the city was planned by someone, with the sole exception of the passage of cattle from George Street, but there was no intention of making it an understandable whole. For Susan King, the first Sydney is a messy, polyglot, diverse city that accommodates a vigorous and energetic population, not a piece of formal, lifeless design [41:7].

## Lachlan Macquarie, Governor

The arrival of Lachlan Macquarie (1762-1824) put an end to the power vacuum created by Phillip's departure and changed the way in which the city was conceived. Macquarie arrived with the 73rd Regiment of Foot and, as first military governor, put NSW in order as a first step to control the city. While the former governors were seamen, and their concern was to get to Sydney and to maintain the maritime safety of the site, Macquarie, on the other hand, was the first to worry about the city itself and his main interest was to build it, in the deepest sense of the word.

He tried to make this a reality and he did his utmost for its institutions and to endow it with its main physical elements: streets, squares and public buildings. Lachlan Macquarie had the ambition to make Sydney a beautiful city, beyond its

criminal character, but that aim was at odds with London's insistence that the new colony be managed as a deterrent site, offering only the most basic subsistence.

To achieve his purpose, he restored order and began to give shape to that evolved encampment. As he needed technicians, he sought an architect, and found Francis Greenway among the convicts, whom he called to his service in 1816.

Architect Francis Greenway (1777-1837), convicted of forgery, played an enormously important role for the city in designing and building its first institutional buildings. Appointed to Macquarie's service in 1816, Greenway assumed the governor's beautification goals as his own and raised the standards of design and quality of all official assignments, contrary to the intention of the British.

The British government had previously rejected NSW's request for governor Lachlan Macquarie to appoint a government architect, and had insisted that Greenway's work be temporary. However, Greenway became the first of the 23 architects of the NSW government whose collective tenure spans two centuries. While their titles and job descriptions have varied, their role has remained essentially the same one defended by pioneer Francis Greenway. For 200 years, the Government Architect's offices have followed Greenway's ambition to design for the future and set the architectural standard for Sydney and New South Wales [47:4].

Years later, the Colonial Ministry sent John Bigge to Sydney to control the architectural ambitions of Greenway and his patron Lachlan Macquarie. He recognized that *the style of architecture was gradually improving in Sydney under the direction and taste of the colonial architect Mr. Greenway*. Greenway's initial idea that official buildings would serve as a model for the rest of buildings had been successful, and the example had been followed [47:9].

Greenway was succeeded by Mortimer Lewis, who was the first colonial architect to enjoy an expanded mandate —15 years, starting from 1835— and whose staff consisted of himself as sole architect, a draftsman, a clerk and a commissioner, who developed a prolific production.

In addition to being the first architect of the government, the convict Francis Greenway remains the best-known architect of Sydney's earliest times, and his urban buildings and suburban churches are well-appreciated.

One of the first decisions of Macquarie was the creation of a new hospital, to replace the one established in The Rocks by Phillip with temporary tents and barracks. For its location he destined lands located to the west of the Government Domain (property of the governor), where his residence was located, that he delimited with a new road, later denominated Macquarie Street.

To fund the hospital, Macquarie negotiated with the settlers and the city's first businessmen, and signed a contract granting them the right to use convicts as workforce for their own benefit and priority access to certain supplies, plus a monopoly on the import of about 200,000 liters of rum, later increased to 275,000.

## Francis Greenway, Architect



Rum Hospital, 1894

## The Rum Hospital



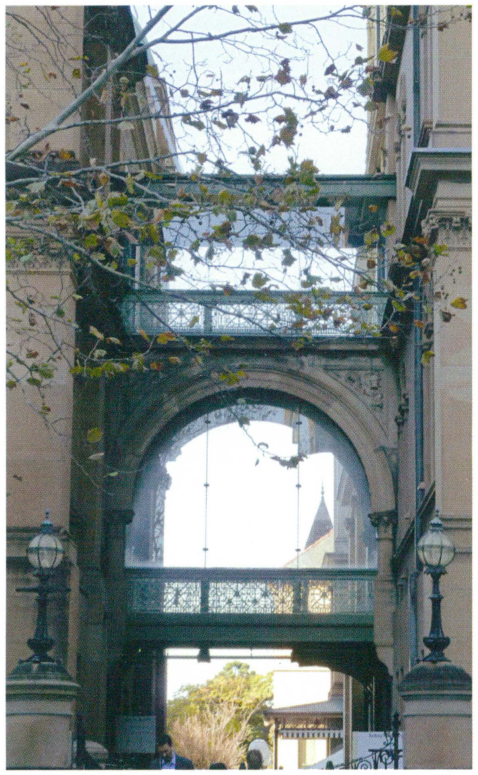
Rum Hospital, 1894







The Mint, south wing of the Rum Hospital, 1816





Rum Hospital, 1894

With this, he also established a system of concessions for the rum traffic, which detracted from the maneuverability of the Rum Corps, by introducing new interests and a struggle for its control, which contributed decisively to the pacification of the city. Among the signatories to the contract were Irish physician D'Arcy Wentworth, who would later be the hospital's first resident doctor, and whose son, William Charles Wentworth, would become a major driver of parliamentary democracy in NSW and is considered the 'father of the Constitution.'

The construction of the new hospital began around 1810, apparently under the direct supervision of Macquarie himself, with the help of still unknown aids. But it is well established that in 1815, he asked convict-architect Francis Greenway for a report. The letter ruled that the building was poorly made and would fall soon. Macquarie ordered to repair the defects but, in 1820, part of a wing collapsed, and Macquarie assigned to Greenway its complete repair, which included changes in the design of the roofs and a new interior layout.[8]

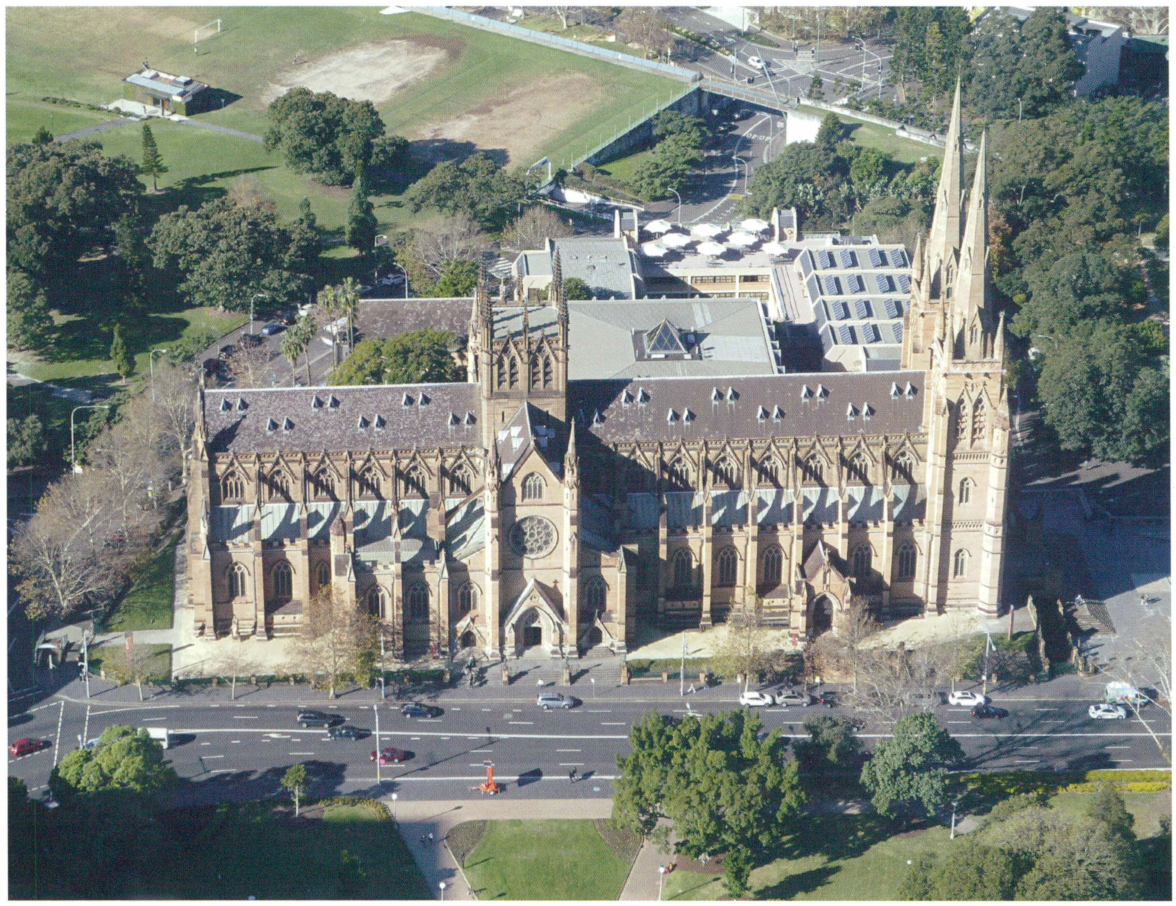
## Construction and Remains of the Hospital

The resulting hospital is a large building, with a central body and two wings, probably quite disproportionate for the needs of the still small colony, and from the beginning several areas of the building were used for other, non-medical purposes. Among these other uses, part of the north wing was used as Supreme Court and, since 1829, it housed the *First Legislative Council*. In 1894, the hospital was completely rebuilt.

The south wing is all that remains of the original design, after its successive reforms, and it contained the residence of the doctors. In 1823, the upper floor was destined as military hospital and in 1828 the entire building was designated as infirmary and medicine dispensary. Regarding its elevation, Greenway thought that the columns lacked a certain classicism of proportions. With the discovery of gold in NSW in 1851, the building was



Sandstone cliff at the beginning of Macquarie Street



St Mary's Cathedral

converted into the Sydney Royal Mint, the first overseas branch of *London's Royal Mint*, commissioned to melt gold and mint coin, and now known simply as *The Mint*.

## Macquarie Street

The hospital was accessed by the road drawn by Governor Macquarie, oriented north-south from the rocky cliff of Sydney Cove, whose initial purpose was to demarcate the public properties of the governor's palace and its grounds, which were later converted into a park and botanical garden, from the streets of the city. That role was blurred by Macquarie himself when he used some of the land for the construction of the hospital. With this, its east side was occupied by this first institutional building, to which were later added the NSW Library, to the north, and Hyde Park Barracks, to the south.

Behind these barracks was a new lineup of public buildings, consisting of the Land Department and St Mary's Cathedral and the Australian Museum, with access on the east side of a new street later called College Street. Past Hyde Park Barracks, Macquarie Street becomes the main hub of Hyde Park.

On the side of the city, to the west, offices and residential buildings were built, which were occupied by law firms and medical societies, most notably the British Medical Association Building, built in 1930 (see Expressionism in Chapter 4). Among such magnificence, Macquarie Street functions as a real square, in which parks and large public buildings are juxtaposed, in a landscape of yesterday and today that constitutes a significant portrait of Sydney.

A stroll on the current Macquarie Street reveals the collective memory and the dreams of the city, how *distant times and places penetrate the landscape and the present moment*. The street is a place in and of itself, a narrative path throughout








State Library of NSW

the mythological topography of the city. *On the eastern side lies the Botanic Gardens, and as I gaze out over the green sweep towards Farm Cove and the harbour beyond, I catch again the scent of threshold magic. On a whim, caught up in the web of urban dreams, I cross over to the Palace Garden Gate* [41:104].

## Macquarie Place, 1810

For its part, Macquarie Place, established in 1810, is Australia's oldest urban space and its triangular shape responds to the natural topography of the original coastline of Sydney Bay and the Tank Stream. The obelisk was erected by Governor Macquarie in 1818 as the geographic central point of Sydney in the nineteenth century, to mark the place from which the mileage of all public roads started, a function fulfilled for more than 190 years.

Designed also by Francis Greenway in Georgian style, the obelisk and the square symbolize the vision of Sydney by Governor Macquarie and his wife Elizabeth as an elegant and planned Georgian city. A vision that far surpassed the narrow conception of the British Government of Sydney as a mere penal colony. In the history of the city, the square is a place of transition [41:96].

## Hyde Park Barracks, 1819

At the end of Macquarie Street and on the edge of Hyde Park rises a building that, although partially transformed and much reconstructed, revives the air that breathed

Monument to Thomas Mort, Macquarie Place



Kyle House, Macquarie Place



in that city of convicts. It is a rectangular enclosure surrounded by a high stone fence, in whose unencumbered center stands a brick building of serious and careful appearance, surrounded on two sides by smaller buildings.

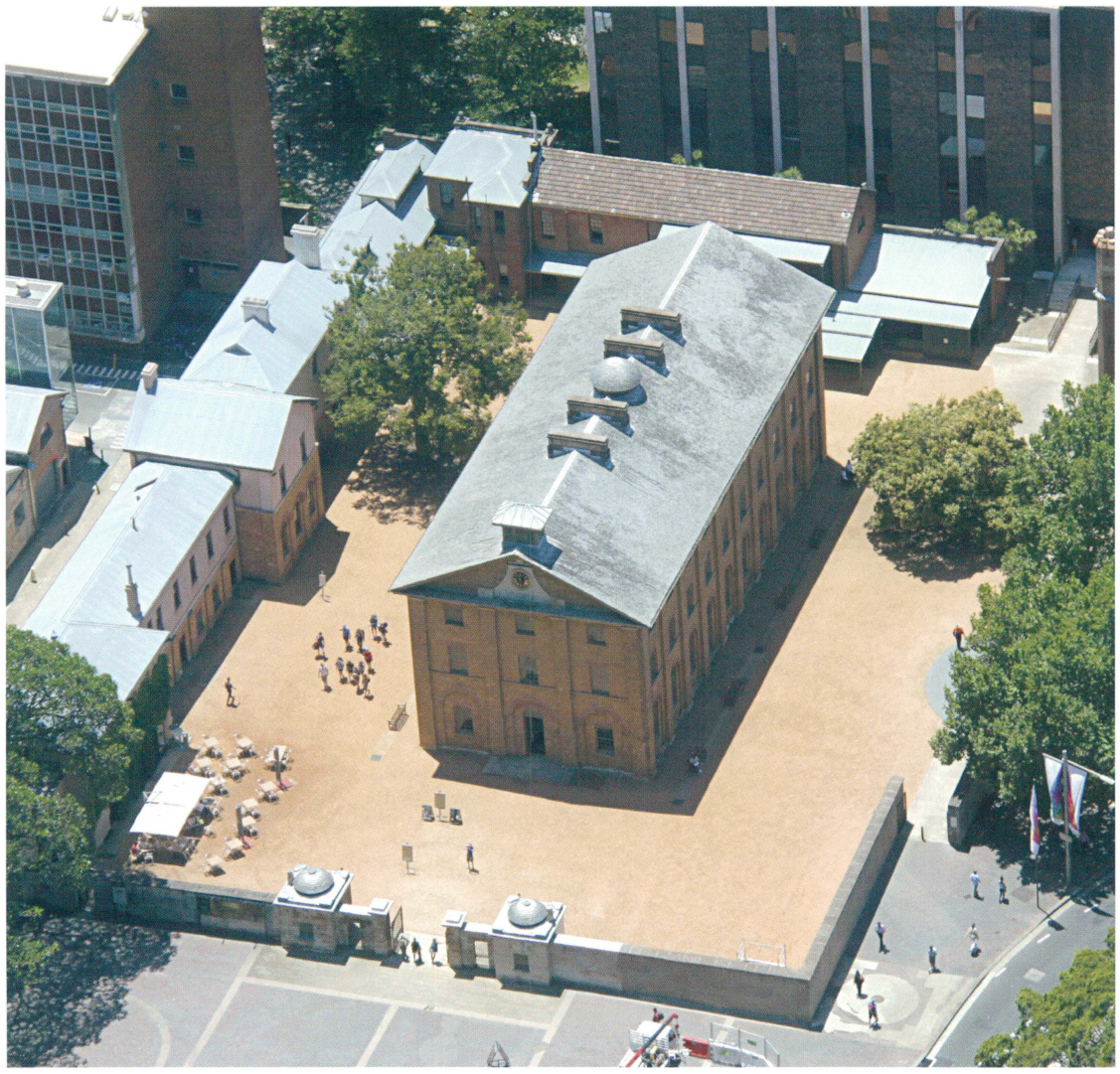
The façades of the main building, with three flights of decreasing height and pitched roof, are simple and elegant, and are divided by brick pilasters and contain recessed arches on the ground floor and windows of straight lintel in the upper ones, with a large eave surrounding the whole building.

The complex was built by Francis Greenway, according to the instructions of Governor Macquarie, as a night lodge for the male convicts assigned to his care, normally in charge of carrying out public constructions, among them this building. Regardless of its intrinsic value, the complex fulfills an important urban role, in the context of Macquarie Street, next to the Mint and other important public buildings. It marks its south end and hinges with Hyde Park, with its surrounding walls and its gates, like a watchdog.

Researchers point out the importance of these 'constructed landscapes' to reinforce the penal objectives, and their varied design and construction reflect the 'penal envi-



Hyde Park Barracks









Berrima Court House

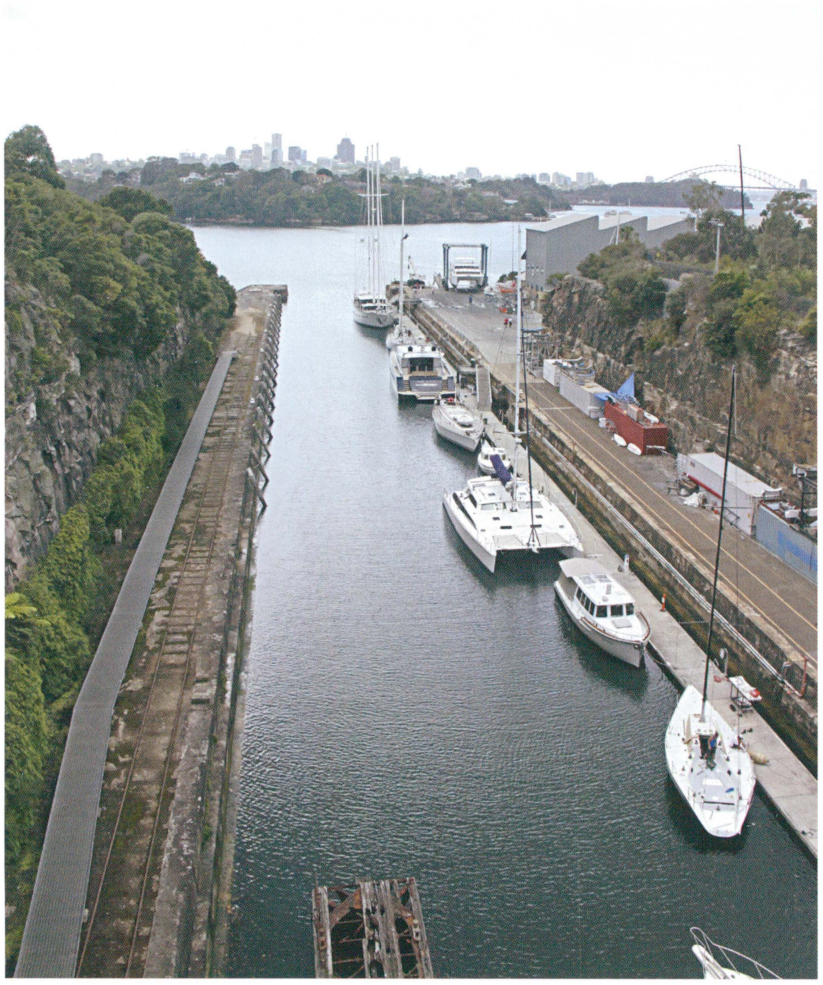
Berrima Gaol

## Darlinghurst Gaol

ronment' with all the complexity of places, establishments and purposes already mentioned. The buildings, the walls, the fences and the cells were arranged according to configurations according to the principles of hierarchy and vigilance, prevalent in any system of confinement. These applied to small rural prisons such as Berrima Gaol, as well as to major urban penitentiary complexes in central Sydney such as Hyde Park Barracks or Darlinghurst Gaol.

Often, next to these buildings were the Court Houses, usually decorated with classical architecture, more or less elaborate according to the corresponding category of the town or city. A substantial element of these compositions was a monumental entrance or porch with columns and pediment, behind which the courtroom was located, prolonged laterally in two symmetrical wings of simpler character to lodge the administration.

Darlinghurst prison was a large building, prominently located, visible from all sides and with great relevance in the landscape of Sydney and in urban myths until its official closure in 1914. Its ominous presence was counteracted by the classic façade of the courthouses built adjacently and by the view of the gardens and large residences of Potts Point and Elizabeth Bay, highlighted by the sea extending on the south side of the dividing line. The prison, the courthouse, and the villas epitomized power and displayed it to the city below, as a bodily presence of the colony's dreams of civilization [41:170].








Woolwich Dry Dock

Berrima Court House

Hansa Bridge, Wingecarribee River, Berrima NSW, c. 1915. Built by internees from the Hansa group of shipping lines, World War I. Courtesy of Berrima District Historical & Family History Society Inc. Image Library, 010/010437

## Rural Justice

In the rural world of Berrima, the two most important civil buildings are the court and the prison; both built in classic style and local sandstone by the colonial architect Mortimer Lewis (1796-1879). The Berrima Court House (1838) on Wilshire Street was the setting for Australia's first jury trial. In 1848 the court was transferred to Goulburn and heard only local cases until 1884. In 1936 it reopened as an art school and in the 1970s it was restored, opening to the public in 1979 as a building listed in the National Trust.

Next to it is the Berrima Gaol prison, built by convicts between 1836 and 1839 with its arched portal inserted in a rounded tower and extended with walls on both sides. In 1866 it was enlarged in its front part, the walls were elevated and everything was renewed following the standards of the reform of the penitentiary system, although it still had solitary confinement cells. Inmates included residents and travelers of different kinds, such as merchants, naval officers, and sailors. The prisoners were held at night but after the morning recount they could walk freely within a radius of just over 3 km, returning at five in the afternoon. They built an ornamental garden and a flotilla of canoes on Wingecarribee River.

The prison closed in 1909 and was abandoned until 1949, when it reopened as Berrima Training Center, a minimal security correctional facility. During World War



Busby's Bore, possibly by Charles Henry Woolcott (1821-1905). Water delivery system in Hyde Park. Courtesy of State Library of NSW, a1528385

I it became a camp for German prisoners (1915-1919), most of its 329 interns being foreign citizens of enemy nations from merchant ships (captains, officers and engineers).

## Water Supply

In parallel to the construction of institutional buildings, the incipient colony tried to improve its Public Works and Spaces, with special attention to water supply and parks. With the growth of the population, the primitive system of the Tank Stream became contaminated and was rendered useless for the supply of the city. It was necessary to search for water a little further from the city.

South of Sydney, the Lachlan Swamps are part of a series of freshwater lagoons located on Botany Bay Road in an area now occupied by a golf course and the lagoon called Mill Pond. Until 1850, the southern part of the area remained virtually untouched and its good quality water supplies became the second system of supply following the contamination of the Tank Stream.

## Busby's Bore, 1837

In 1827, John Busby, the government's Mineral Surveyor, recommended draining the wetlands of Lachlan Swamps (then Centennial Park) with a tunnel and taking its waters to the race track (then Hyde Park). For ten years, convicts and some free workers excavated a 3,500 m long tunnel and a square section of one meter on the side, with some caves up to 4 m high. In its route 27 vertical wells of up to 18 m deep were carried out, to facilitate the construction and to inspect its later operation.

The system, colloquially called Busby's Bore, provided from 1,200 to 1,500 cubic meters of water per day, then considered sufficient for a population of about 20,000 people. In 1902, the tunnel also began to get wastewater leaks from the urban fabric itself and ceased to be used as a Sydney supply system, although it remained in use for irrigation and other purposes until its closure in 1934 as it passed under Oxford Street.

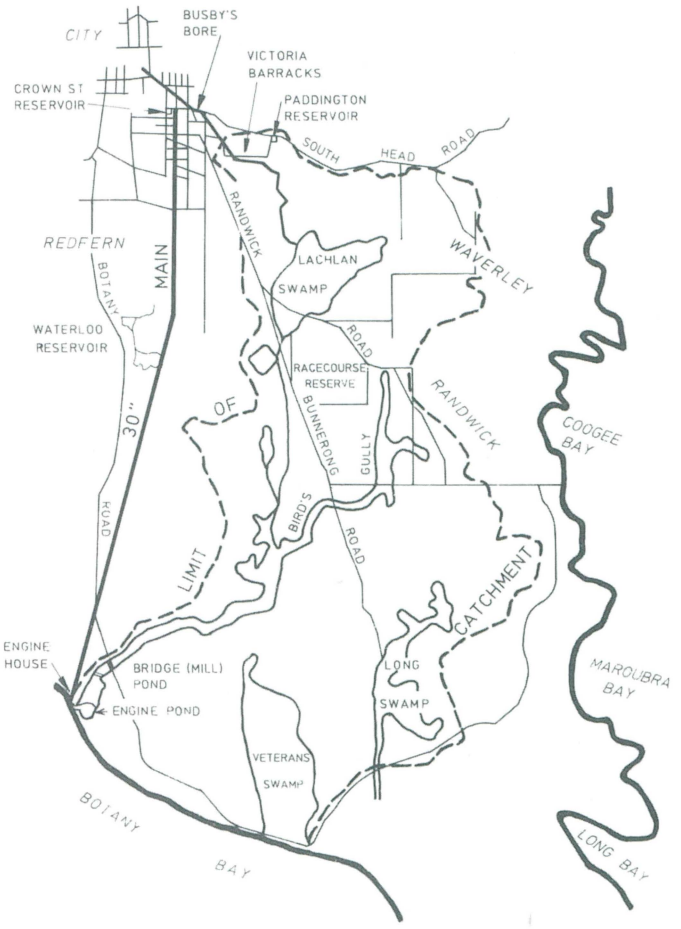
## Botany Bay System

In 1854 it was decided to improve Busby's Bore water supply by establishing a small pumping motor on Randwik Road (Alison Road) to lift some of the low-level flow of the Lachlan Swamps through a tunnel to an area very close to Hyde Park, then a fair-ground, but the pumping motor was insufficient and in 1859 a new, higher flow line was put into service, driven by a pump powered by the first NSW steam engine to a 76 cm diameter pipe made of cast iron rings 5 cm thick and stretched in straight line to a high deposit in Surry Hills.

## Deposits of Crown St and Paddington

The 15-cubic-meter water deposit at Crown Street (1854) was another interesting engineering work of the time, built with brick walls lined with ceramic pieces down to the water level. Its roof was made with recessed vaults of brick on foundry beams in a fish belly shape.

This roofing system was also used in the Paddington deposit, completed in 1866 and also belonging to the same scheme but of greater capacity and located at greater height in Oxford Street [60:21]. When it was declared out of service, the deposit found several new uses and was later rehabilitated as a garden (See Chapter 3).




Sydney Water Supply System, 1866. [23:20]

## Landscapes of Exclusion and Control

The irruption of an exercise of power proper to an elaborate penal system in an isolated culture closely linked to its natural environment represented a brutal invasion of the indigenous world. From this double shock upon a stolen world, the outbursts of Sydney emerged with force and splendor. Born as a penal colony, it became in a little more than a hundred years an elegant and successful port of the Empire [41:323].

The birth of Sydney as a penal colony entailed constructions and behaviors aimed at imprisoning and controlling the convicts, influenced by global and imperial methods and dictates, as well as by local conditions of sites, possibilities and rhythms, inevitably producing a prison landscape [61:31].

The work of the convicts for the Australian administration from 1788 to 1868 responded to a few basic principles, commonly employed since times immemorial by all regimes and countries, but manifested differently according to the designated objectives. Even in Australia, convicts, captives or criminals directly linked to the colonial administration worked on a wide and complex range of systems, in a large number of sites and for a wide variety of purposes. Researchers have synthesized them into five major systems or establishments: day crews, workplaces, workstations, industrial facilities and establishments, often mixed, evolving or subdivided according to the sites.

The spaces of the *day crews* are the most immediately recognizable, being places of confinement or residence often linked to cities, such as Hyde Park Barracks in Sydney, veritable prisons from which workers went out every day to perform concrete works or services more or less nearby, such as the construction of roads, ports, dykes and other Public Works or Buildings, or to perform agricultural tasks. The *work camps* were set in more remote locations, linked to a specific work or task. Depending on the duration or the characteristics of the work, the accommodation could consist of tents or precarious constructions, although the whole operation required additional logistics of maintenance, supervision and administration, including the daily supply of food, then dismantled at the end of the work. The *workstations* were similar to the workplaces, but were set up in places somewhat further away for a longer-term purpose or were especially dedicated to the most troubled prisoners. In them, a part of the prisoners was dedicated to the administration of the building or the facility. A typical example were the mines of coal and other resources, especially numerous in the Tasman peninsula. In *industrial facilities*, the work was more diversified, and they were not especially tied to a concrete place nor were they long-term projects. In Port Arthur, for example, some facilities were dedicated to the extraction of wood in the forests, while a large proportion of the prisoners worked in shipyards for the construction and repair of wooden ships. Finally, the *establishments* brought together in one place all these activities, with night detention areas for overnight stay, and others with workshops, factories for carpentry, milling, sewing or laundry, usually destined to the female inmates [62:5].

Studies of the relationship between prisoners and jailers show the difficulty of achieving an efficient extraction of the labor force with the mere use of the whip, the law or indulgence, requiring a series of complex negotiations to manage it efficiently. Fundamentally, the organization of labor extraction depended on the place and the facilities in which it was carried out and on the methods for obtaining and quantifying it. In addition, all this had to be carried out in accordance with the decisions taken by London and the colonial government, covering both organizational and management issues and the returns of the workforce.

The behavior of the prisoners was encouraged with more rations or extra food, better accommodation, reductions in conviction or promotion to more bearable positions. The specialization or abilities of the prisoners were carefully monitored by the administration in order to fulfill all the occupations required by a community, in principle intended to be self-sufficient. The supply and demand of these trades could elevate a farmer, because there was no-one able to milk a cow, or an architect like Greenway, indispensable in the construction of the city, who could obtain a status and a certainly enviable way of living with a wife, land and a house of his own; although, at times, the price paid was to remain tied to the system beyond the term of one's sentence. Opting out of these incentives meant to continue under the whip, isolation, hunger and the prolongation of penalties. The hardest and most painful jobs, such as timber harvesting, quarrying, or coal mining were reserved for newly arrived convicts.

The group of persons responsible for the supervision of the prisoners and the implementation of measures for its effectiveness were also carefully regulated. In principle, it was a mixture of military, civil servants and the prisoners themselves, whose roles also evolved according to the time, place and type of site or system where they were held. The security and control of the installations used to be responsibility of the military, who also participated actively in the definition and realization of the Colonial Public Works. Civil servants were a mixture of free and convicted settlers who had already served their time, and were usually in charge of the operation of the machinery of the system, with a general tendency towards a progressive professionalization. The prisoners occupied administrative positions, such as supervisors or accountants, and were responsible for obtaining returns from the work of others, being simultaneously evaluated by the overall returns achieved [62:9].



Darlinghurst Court House



Police and Justice Museum




Glebe Court House



Sydney City Centre

### Tank Stream Art Works

*Tank Stream – Into The Head of the Cove* is a series of art works and installations created by Lynne Roberts-Goodwin in 1999, in the form of a path that follows the original course of the river, in a route from Circular Quay to the heart of the city at the corner of Alfred and Pitt Streets. The path marks the course of the stream, including the area where it is buried in a tunnel as part of the drainage of the city, and commemorates with an ornate fountain the place in which it originally flowed into Sydney Cove in 1788.

There is also an inscription with the words of Watkin Tench, captain of marine infantry, dated January of 1788: *Into the head of the cove on which our establishment is fixed, runs a small stream of fresh water, which serves to divide the adjacent country to a little distance, in the direction of north and south* [41:94].

### Layouts, Ruptures and Pipelines

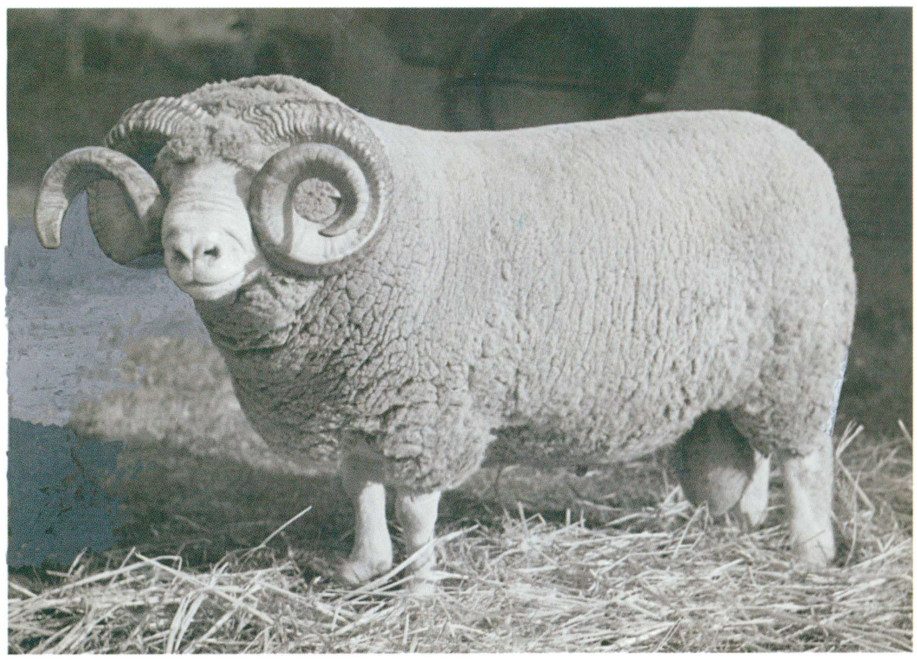
Its rectangular boundaries became more precise with the successive construction of streets in the following decades: Francis Greenway's institutional buildings on Queens Square to the north, Elizabeth Street on Macquarie, the south-east corner on the road to South Head, now Oxford Street. In the 1830s, new streets came to divide the park: the Park Street layout split it in two, and the streets of Liverpool and College invaded its original boundaries [58:138].

### Obelisk with Ventilation

It originally contained the intake source of Busby's Bore water supply system coming from Victoria Barracks heights, which ended at the southeast corner of the current park, near Oxford Street, where water was served by an overhead pipe supported by wooden trestles, and from here it was distributed with buckets. By 1830, drinking water had reached the city and, gradually, the plumbing network was expanded to supply the population. In 1880, two of the first public drinking fountains, the Frazer Fountains, a gift from merchant John Frazer, designed by the town architect Thomas Sapsford, were built in Hyde Park.

On the west side of Elizabeth Street is the famous Obelisk, one of the city's earliest monuments, built in 1857 under Mayor George Thornton and known as "Thorton's Scent Bottle." The Egyptian features of its Victorian-era decoration hide its true functionality as a ventilation chimney for the city's sanitation system.

In the 1920s and 1930s Hyde Park underwent major renovations (see Chapter 4 below) and became a regular venue for the commemoration of the great wars of the 20th century. Today it remains a place of recreation for visitors and for the people of Sydney.



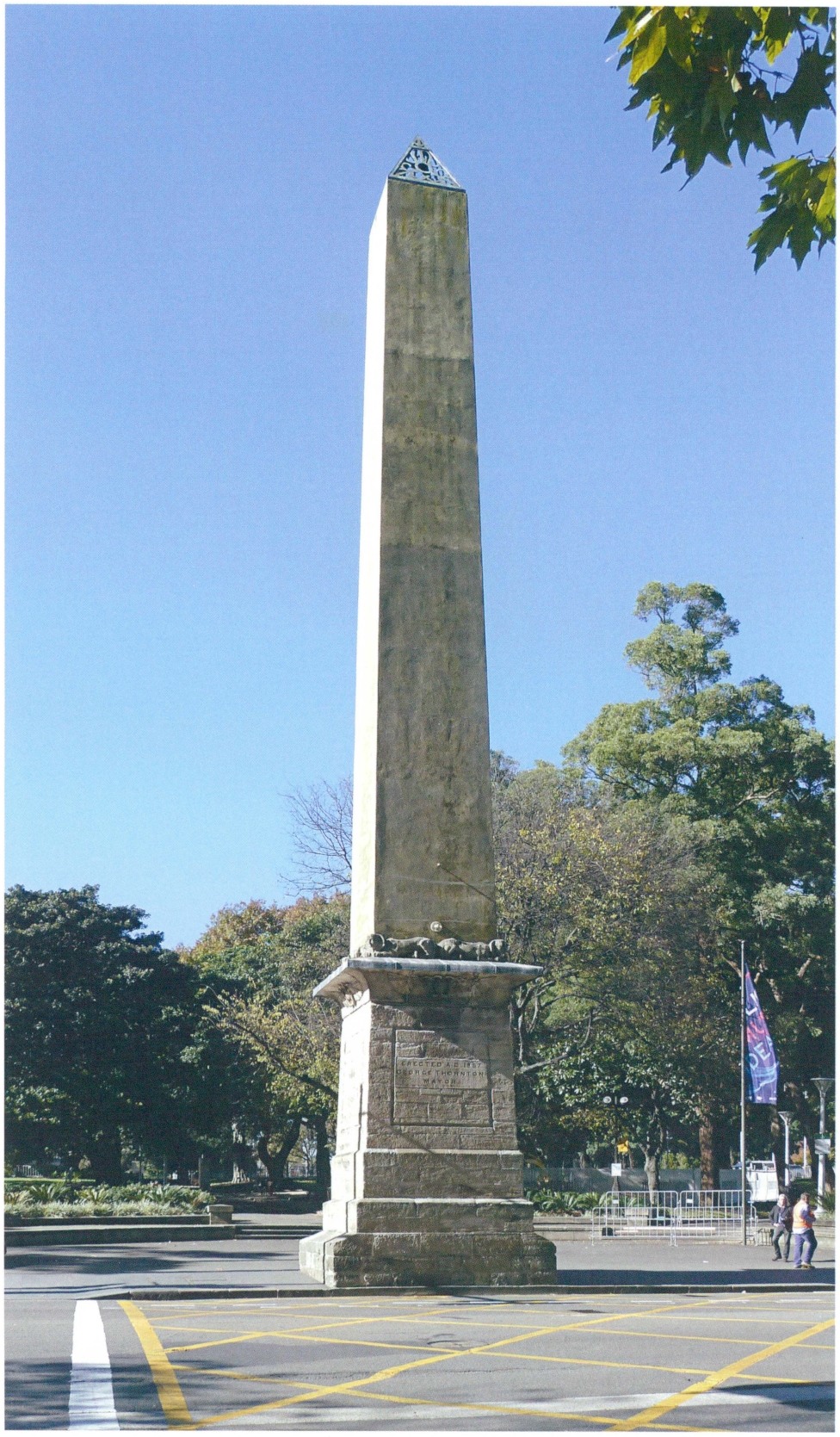
Ram in an Australian farm.
Various breeds of ewes and rams, on show, at auction and at stud farms around Australia. Phillips, Keith P & Fishwick, Herbert H & Sheppard, B & Argus Melbourne, Vic. & Sydney Morning Herald 1936, Courtesy of Pictures Collection, State Library Victoria, ID 53146175

### Prosperity Arrives with Wool

When the colony was eighteen or twenty years old they discovered that the land was specially equipped for wool production. From then on, Twain sums up: *prosperity followed, commerce with the world began, by and by rich mines of the noble metals were opened, immigrants flowed in, capital likewise. The result is the great and wealthy and enlightened commonwealth of New South Wales.*

*It is a country that is rich in mines, wool ranches, trams, railways, steamship lines, schools, newspapers, botanical gardens, art galleries, libraries, museums, hospitals, learned societies; it is the hospitable home of every species of culture and of every species of material enterprise, and there is a church at every man's door, and a race-track over the way* [63:18].

Hyde Park Obelisk





Ventilation system in Hyde Park Obelisk



Tank Stream Fountain Sculpture, Herald Square

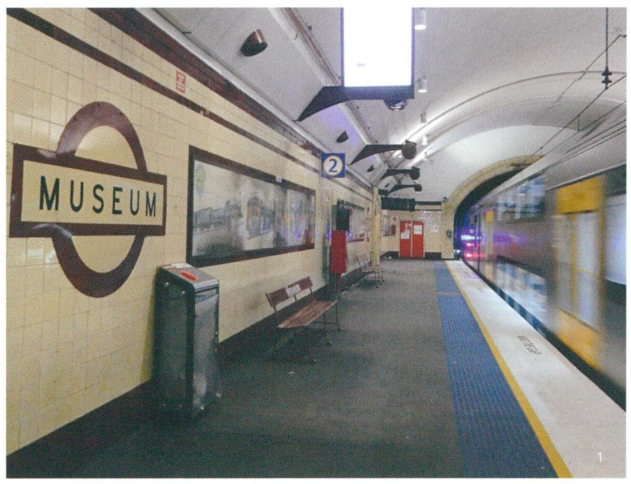
## Hyde Park

The most central park of the city occupies the site of the old Commons designated by Phillip in 1792 for cattle of the nascent colony and declared a park by governor Macquarie in 1810. It is located in the south edge of an elevated piece of land which makes it the horizon of a large part of the city, and it is surrounded by some of its major buildings, such as Hyde Park Barracks, Sydney Hospital, Australian Museum, Sydney Grammar School and Downing Center. Governor Macquarie called it Hyde Park in honor of the eponymous London park.

Initially, the area to the south, where the monument to Anzac now stands, housed a space for Aboriginal fighting and martial demonstrations, which was later used by settlers and the garrison for sport competitions. Commonly known as The Common, Exercising Ground, Cricket Ground or Race Course, it held among others: horse racing, cricket matches, and boxing matches between settlers and the country's first rugby match, until it opened as a park with roads and planted gardens. Cricket and football moved to Moore Park, Garrison Ground and The Domain, whereas horse races were held at Sydney Turf Club (1825), Parramatta and Camperdown.

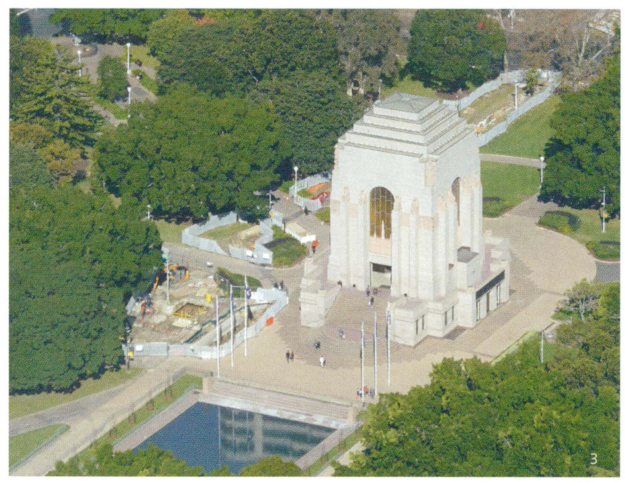



1. Museum Railway Station
2. Emden Gun
3. Anzac War Memorial
3. Nagoya Gardens
4. The Pool of Reflections
5. Obelisk
6. Frazer Fountain
7. John Baptist Fountain
8. Sandringham Garden
9. Walker Fountain
10. Archibald Fountain
11. Oddfellows Memorial
12. Busby's Bore Fountain
14. Giant Chess
15. St James Station



1


2


3


8


10


10








11


14



15



## Royal Botanic Gardens & Domain 1816

This large green area stretched from Woolloomooloo Bay to Circular Quay, and to Hyde Park to the south. Located in an exceptional enclave, with views of the bridge and the Opera, it appropriates the bay as a scenic background of its routes. This area, called Wahganmuggalee by the Aborigines, was renamed Farm Cove by Governor Arthur Phillip, who established there a small farm and reserved an open space for his exclusive use, which he called Phillip Domain. This farm was the place where the British planted their first crops, but due to the poverty of its sandy soil, crops were soon moved to Parramatta. In 1810, Governor Macquarie built a 290-meter-long stone wall around the grounds of Government House and Government Domain. In 1817, The Domain was completely closed and its system of roads and paths was finalized, including numerous gates to regulate access and traffic, mainly equestrian.

In the 1830s, The Domain was opened to the public and several of its trees were cut down to open up large grasslands. It was one of the favorite places for people to stroll due to its spectacular views over the bay; Mrs. Macquaries's Chair is still preserved, a bench sculpted in the rock where the Governor's wife sunbathed and enjoyed the scenery. Over time, Government Garden took over the entire Inner Domain, whereas the Outer Domain became what is currently known as The Domain.

The lands west of Macquarie St. were sold to pay for the construction of the new Government House (1837-1843) and Circular Quay (1837-1844). Subsequently, The Domain was reduced to 65 ha by the construction of fuel tanks for ships, the new means of transport and modern equipment. It is one of the main cultural enclaves of the city, where the first governors built important buildings (Art Gallery of NSW, State Library of NSW, Government House, Opera House and Conservatorium of Music).

The Domain suffered the pressures of city growth. The Garden Palace was set up there in eight months to host the first International Exhibition, Sydney International Exhibition, inaugurated in September 1879.[9] In particular, the circular fountain of Pioneer Garden, in the southwest corner of the current Royal Botanic Garden, marks the place formerly occupied by the great dome. The large building was designed by James Barnet and built by John Young following the English model of London's Crystal Palace.

Its structure was formed by two main perpendicular wings with lateral aisles on each side and topped by towers; the intersection was crowned by a large dome, 30.4 m in diameter and 65.5 m high. Its north tower housed the first hydraulic lift of the city. After the exhibition, the building was occupied by government offices and in 1882 it was almost completely destroyed in a fire, being largely made of wood. Only the sandstone piles and wrought iron gates are preserved, currently at the Macquarie St. access to the Botanic Garden.

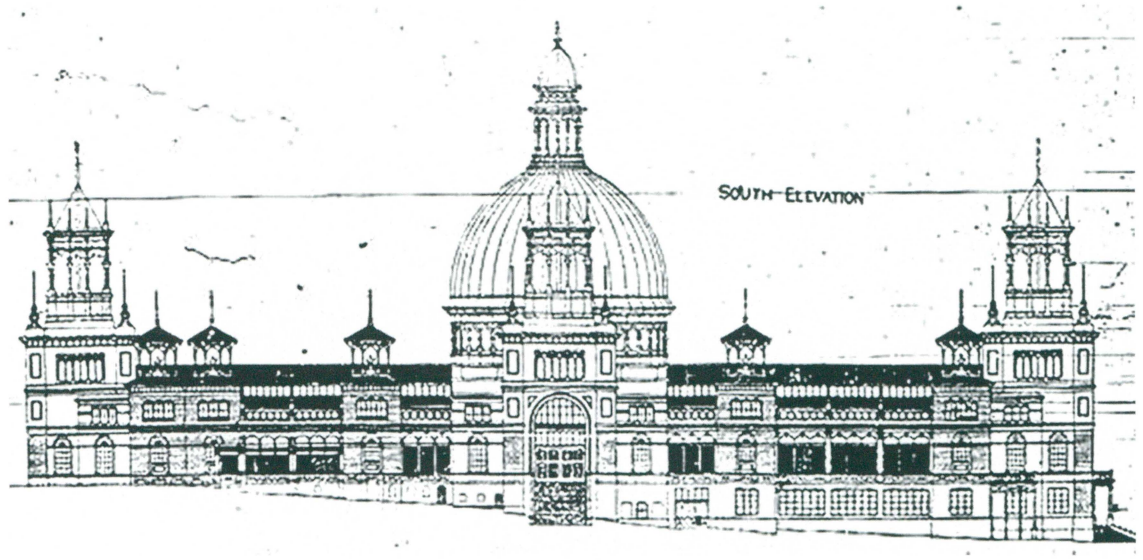
During the various economic crises and especially in the 1890s, The Domain became a haven for hundreds of homeless and unemployed people. In the Depression of 1930 numerous tents were installed where the vagabonds took shelter. In these times, the safety of the area was threatened by increasing crime. Since the end of the nineteenth century it has also been a place closely linked to politics; like the famous Speakers' Corner in London, numerous claims have been made from its "Soapbox," and it has hosted many meetings and rallies. [10]

Currently the public park of The Domain with its 34 ha is a very popular space where many events, such as major concerts and sports competitions, are held. Both parks are listed on the Heritage Register and managed by the Royal Botanic Garden Trust. The Royal Botanic Garden is one of the great green lungs of the city and the oldest scientific institution in the country: it hosts a great diversity of species, many of them in danger of extinction.[11]

It has several gardens connected by footpaths,[12] and preserves the oldest glass conservatory of NSW, Palm House (1876), built by colonial architect James Barnet, and heated by a system of hot water pipes under the floor, which has undergone several restorations, the last in 1993.

Over time, a number of old buildings have been incorporated into the park, such as Rathborne Lodge, an old residence built in 1856, Cottage 4 or Lion Gate built in 1878 to house the foreman of gardeners, complemented by small English cottage style gardens with an informal design and a mixture of ornamental and edible plants, adapted to the climate of Sydney. Among the buildings in the park are the glass pyramid of the Tropical Center and the pavilion surrounded by the Palace Rose Garden. Currently under construction is the new Calyx building, a circular glass structure that will house a horticulture center.




Plan of Governors Demesne Land, surveyed in the year 1816. By Cartwright, C. From the collection of the State Library of NSW, a2869001



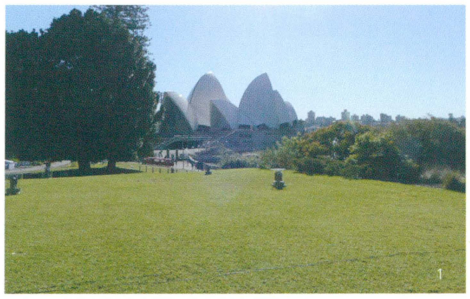
The Garden Palace, Sydney. Southern elevation. 1870s architectural drawing

Royal Botanic Garden & Domain desde Sydney Tower



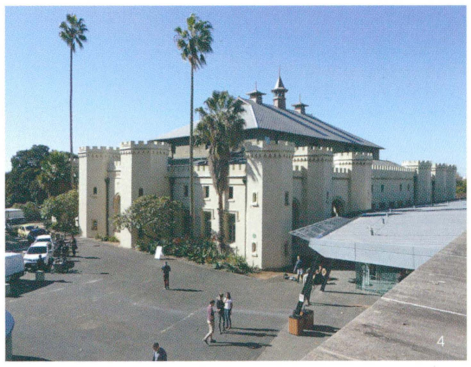
Interior of Garden Palace, Sydney International Exhibition Building, showing statue of Queen Victoria. Bayliss, Charles; Paine, John, 1879. Courtesy of National Library of Australia, nla.obj-140654796


























Royal Botanic Gardens & Domain

1. Bennelong Lawn
2. Government House
3. Parade Ground
4. Conservatorium of Music
5. Old Mill Garden
6. Palace Rose Garden and Pavilion
7. Pioneer Garden
8. Vista Pavilion
9. Greenway Terrace
10. Herb Garden
11. The Calyx - Sydney Tropical Center
12. Main Depot
13. Main Pond
14. Sydney Fernery
15. Rathborne Lodge
16. Choragic Monument
17. Band Lawn
18. Palm House
19. Macquarie Wall
20. Wollemi Pine
21. First Farm
22. Maiden Pavilion
23. Mrs. Macquarie's Chair
24. Fleet Steps
25. Victoria Lodge Gate
26. Lion Gate Lodge
27. Succulent Garden
28. Herbarium
29. Woolloomooloo Gate
30. Art Gallery of NSW
31. Andrew Charlton Swimming Pool
32. Mrs. Macquaries Bushland Walk


11


12

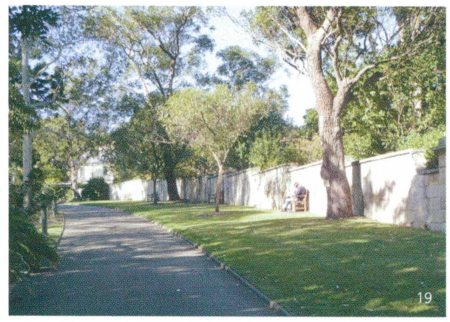

14


15


16


17

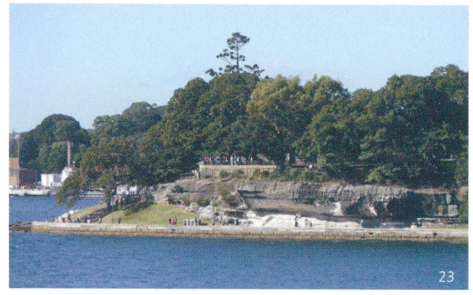

18


19

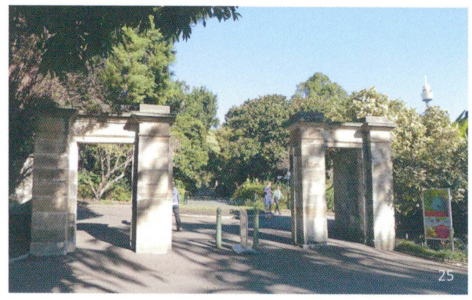

20


21


22

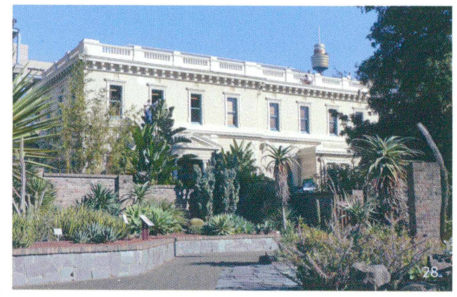

23


24

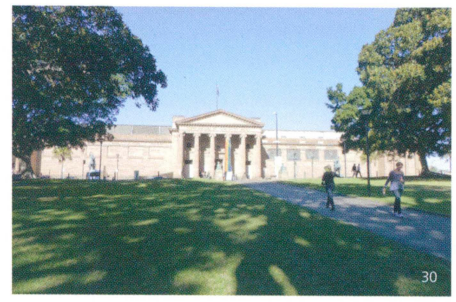

25


26


27


28


29


30


31


32

Potts Point Elizabeth Bay House

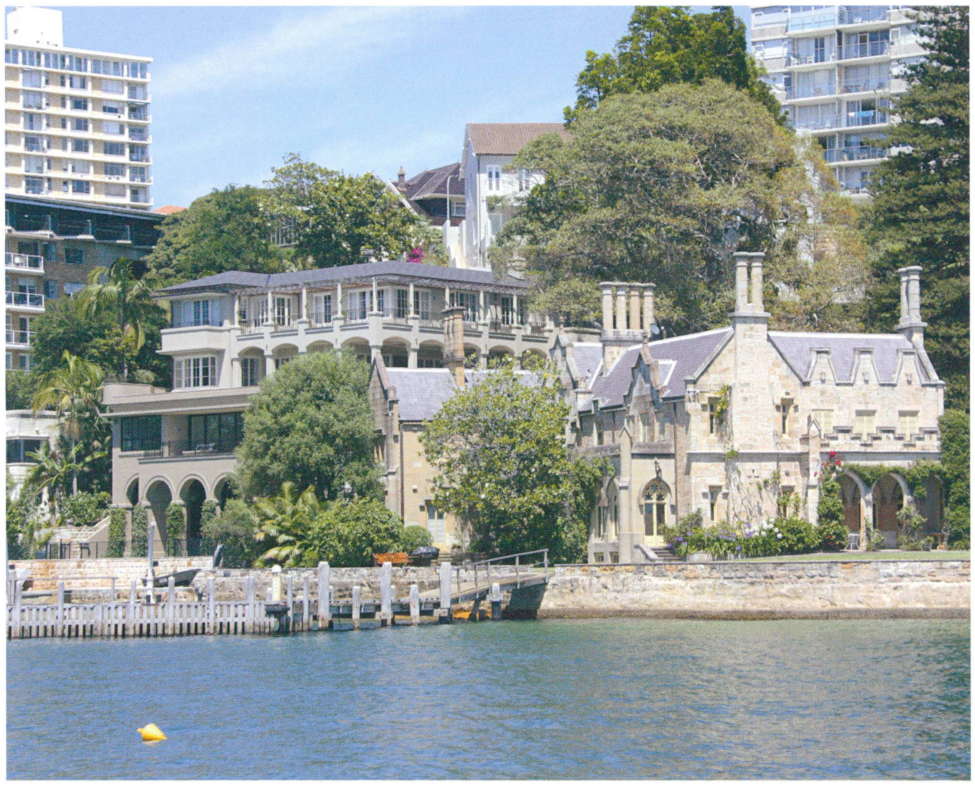


## Magnificent Residences

With prosperity came the magnificent residences. Elizabeth Bay House was designed by English architect John Verge and built in 1839 near Kings Cross, in an elevated position on Woolloomooloo Hill, now Potts Point, dominating Sydney Harbour. It is made of sandstone and consists of two floors in neoclassical style, one with a double height hall with upper gallery and curved cantilevered staircase, topped by an oval dome, plus a large library and drawing room. All of this is made up of circular or elliptical rooms, modeled after the London mansions of Regent's Park in the 1820s, with a porch added in 1893, designed by Victorian architect George Allen Mansfield. It was commissioned by Alexander Macleay, the highest-level official of the colony after the governor, who lived until 1845 in this mansion, known as the most elegant and refined of the city.

The property was surrounded by a magnificent garden of 22 ha, designed in cascade towards the sea shore with ornamental ponds, picturesque grottos, flower garden, vineyard on trellis, rustic bridges and gravel roads. Its elevated position on a hill with clear views of the bay made it the subject of many landscape paintings such as those of Conrad Martens. As a botanist and naturalist, Macleay arranged a true botanical collection of fruit trees, ferns, orchids, many rare Indian species and bulbous plants native to the Cape of Good Hope, planted among native trees and rocky outcrops, following the models of the picturesque gardens of the 19th century. This private botanical garden was visited by numerous naturalists and scientists and horticultural experts worked in it.

William Macleay remained in the house until 1865, and between 1880 and 1927 the estate was subdivided to construct apartments and villas, greatly reducing the garden.





Mansions at the water's edge











Vaucluse House, Watson's Bay



Vaucluse House, Conrad Martens, c.1841. Courtesy of Historic Houses Trust of New South Wales, Caroline Simpson Library & Research Collection, 31102 - Sydney Living Museums, V98/8.

The estate decreased further with the construction of Onslow and Billyard avenues. The house was occupied by several tenants and used as a reception center and, like many of the old Kings Cross mansions, it served as lodging and studio for artists in times of change. In 1940, the mansion of Elizabeth Bay House itself was reformed and divided into 16 apartments, but in 1948 the property was acquired by the Town Council, who commissioned a new garden design from Berzins, known as the first landscape architect trained in Australia [44]. Although there are no remains of the first garden, the reserve in front of the house preserves an ornamental pond, sandstone banks, a grotto and a stone bridge; and at a short distance from the shore is Beare Park. This villa was first catalogued by the conservation movement of the National Trust in 1961 and was restored in 1972 as residence of the mayor of Sydney, although he never got to live there, and the villa became a house-museum in 1977.

## Vaucluse House

Vaucluse House is a fine example of a Georgian house and retains much of its original architecture, surrounded by gardens and woods. The land, near the harbor, was bought in 1803 by Sir Henry Brown Hayes, an Irish convict who built a small four-room cottage on 42 ha. After passing through several owners, in 1827 it was transferred to William Charles Wentworth, a lawyer and politician very influential in the life of the city and one of the first three expeditioners who crossed the Blue Mountains in 1813. A stream traverses the 9 ha of native forest and bushes of the estate —the original plot had 208 ha— to empty into the bay on the north side.

Colonial architect George Cookney worked in the stables, the convict barracks for the servants and other annexed units starting in 1829. The main neo-Gothic building was built in the style of the Sydney Government House, with day rooms and a colonnaded courtyard on the ground floor, bedrooms in the first and second floors. The north facade of the house opens onto the bay with an iron column porch, formerly covered by a huge wisteria (Wisteria sinensis), origin of its nickname *Wisteria House*.



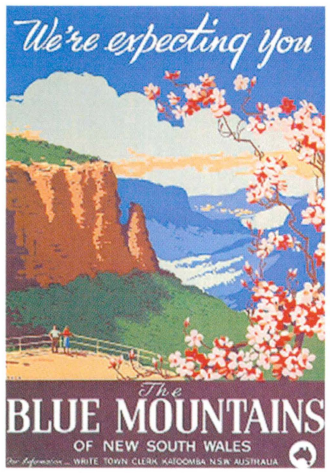
Vaucluse House, stables

The ornamental garden of the north side is organized around a circular fountain surrounded by meadow, a rose garden with arches and gravel roads flanked by low shrubs, so as not to cover the views towards the beach. In the western part near the kitchen are the orchard, farmlands and fruit trees, a greenhouse, the vineyards and the cellars, together with the farm, dairy and stables, which allowed for self-sufficiency.[13]

## From Residence to Historic Site

W.C. Wentworth lived in Vaucluse until 1853 and his family subsequently made several improvements in the house and garden, such as the porch, fountain, fences and access. After several tenants and renovations, in 1911 the government bought the house and adjacent gardens to provide public access to the bay beaches, sold the rest of the estate and opened the ground floor to the public.

In the 1920s, after adding two towers on the eastern facade and more battlements in the front, and building some public restrooms, a kiosk-tea house and new concrete pedestrian bridges over the stream, the residence became a popular tourist attraction. In 1968, the residence was transferred to the National Parks and Wildlife Service, declared as historical site, and more than 200 autochthonous trees were replanted. In 1980 it was transferred to the management of the Historic Houses Trust of New South Wales and at the moment it is part of the Sydney Living Museums.[14]




## The Dream of the West, Blue Mountains

The Blue Mountains constituted a barrier to westward expansion for the colonial settlement at Port Jackson. Several explorers tried to find a way through them, but the deep gorges and thick bushes thwarted their efforts. It took the Europeans 25 years to successfully cross the mountains and another five to map and build an access road and the first settlement of Bathurst. This expansion radically transformed the colony of New South Wales.[15]

By 1810, the scarcity of good-quality grazing land in and around Sydney was evident. In May 1813, the free settler Gregory Blaxland, who had arrived in 1805, along with the explorer and landowner William Wentworth, and Lieutenant William Lawson, an experienced cattle surveyor, and with four servants, five dogs and four horses loaded with food and ammunition began the first successful crossing of the Blue Mountains.

It was a difficult journey of discovery. For 21 days they took shortcuts through the thick scrub by the ridges instead of venturing towards the valleys and marked the way to be followed later with the horses, covering an average of 4.5 km a day. They arrived at what would later be called Mt Blaxland, just west of the Cox River and about 12 km before the divide, from where they could see the rich and abundant pastures on the other side of the mountains, but they ran out of food and returned to the city.

Governor Macquarie granted the three explorers 1000 acres of land as reward, but only Lawson continued to explore and live in the West. In memory of the first crossing there is a municipality named after Gregory Blaxland and William Lawson in the Blue Mountains, whereas Wentworth Falls takes its name in honor of William Wentworth.

In November 1813, Governor Macquarie sent surveyor George Evans to confirm the course set out by Blaxland, Wentworth, and Lawson through the mountains and to extend those discoveries. Evans left Sydney on November 13, 1813 accompanied by two free men, Richard Lewis and Blaxland's companion James Burns, and three captives, John Coogan, John Grover and John Tygh. They arrived on November 26 to the end of the Blaxland route and continued westward to explore the Fish and Campbell rivers, along the O'Connell and Macquarie plains, becoming the first settlers to cross the divide.

Evans arrived at the place of Bathurst on December 9, 1813 and described the landscape around Bathurst in his journal as: *the whole excellent good land, and the best grass I have seen in any part of New South Wales; the hills are also covered with fine pasture... it is in general the sweetest in an open country.* However, his return to Sydney was not without difficulties because in the area of the Blue Mountains he found the route partially destroyed by fire. And making their way through the burnt remains of the bushes was as painful as when they had leaves, shredding their clothes and leaving them without food for the horses.

Today, the metropolis has spread to the mountains themselves, but their beauty continues to attract visitors. Travel guides recommend *to stay a few days to enjoy this wonderful landscape of impossible rocky formations, spectacular trails, dense vegetations and multiple waterfalls.*[16] *A landscape of great beauty made up of a wonderful sandstone plateau with deep canyons up to 760 m deep.*[17] *You will fall in love with the beautiful blue haze of the Blue Mountains, belonging to the World Heritage Site. An enclave of one million hectares of high forests, sandstone cliffs, canyons, waterfalls, and hills.*[18] *Wikipedia nuances: A great part of the Blue Mountains is part of the World Heritage Site of the Greater Blue Mountains Area, with seven national parks and a reserve.*

When the Europeans arrived in Australia, the Blue Mountains had been inhabited for millennia by the Gundungurra people and the lower Blue Mountains by the Darug people. According to Gundungurra history, their creation is the result of an epic battle between the mythological creatures Mirigan and Garangatch, half fish and half reptile, which left in the landscape the great scar of Jamison Valley.

Examples of Aboriginal housing can be found in many places. At Hands Cove, a rocky shelter near Glenbrook, the walls contain drawings of adults and children made with templates. At Wentworth Falls, a rocky mound has a large number of furrows, created by scraping stone implements on the rock to give them shape and edge. There are also engraved images of animal tracks and a formerly occupied cave in the Kings Tableland Aboriginal Site.

However, the most visited attraction is in Katoomba: the Scenic Railway, the world's steepest cable railway with a slope of 52° or 128 per cent and a slope of 415 m to 210 m below the cliff top. It was built in the 1880s for a coal mine in Jamison Valley to transport material from the bottom of the valley to the summit. From 1928 to 1945 the funicular was used during the week for the mine and on weekends it carried a wagon, with capacity for 14 passengers, named Mountain Evil.

The mine was closed in 1945 and the Hammon family made the facility a permanent tourist attraction, electrifying the system and doubling the number of passengers. Little by little auxiliary facilities like a coffee shop and a souvenir shop were built. In 1958, the Scenic Skyway, the first cable car in Australia, was built on the Katoomba Falls circuit at 270 m. Following the inauguration of the country's first revolving restaurant, several expansions of the Scenic Railway, a new 200m Scenic Cableway, and a raised wooden walkway through the Scenic Walkway, the resort has received numerous awards and has become Australia's most visited private tourist attraction.





Blue Mountains - Scenic World



Blue Mountains - Scenic Walkway

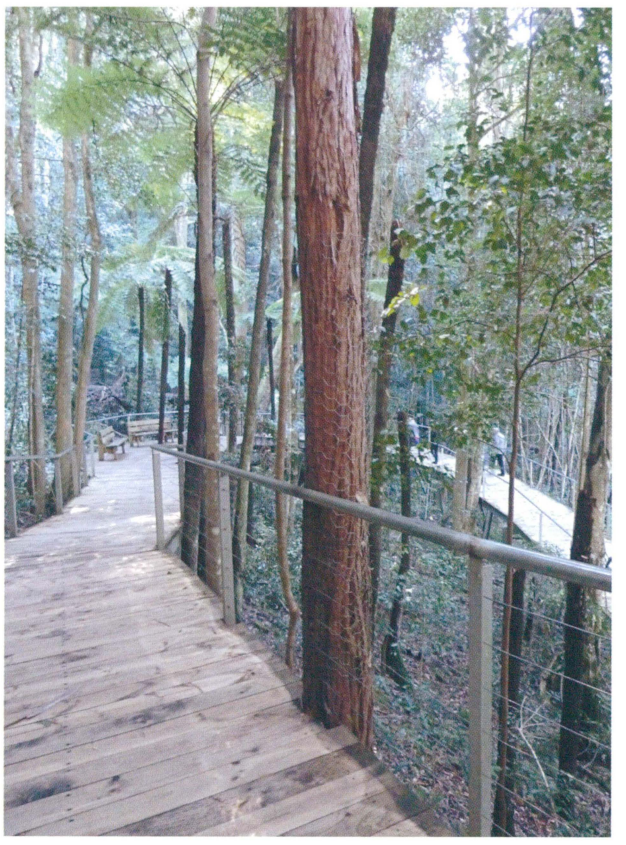


Katoomba Coal Mine, NSW [picture]. Samuel Calvert, 1828-1913, (engraver). Melbourne: David Syme and Co., October 16, 1886. English Art work edition, 1886

Opposite page: Travel poster "The Blue Mountains of New South Wales. We're expecting you". White Town Clerk Katoomba, NSW. Booker, Sydney, 1949



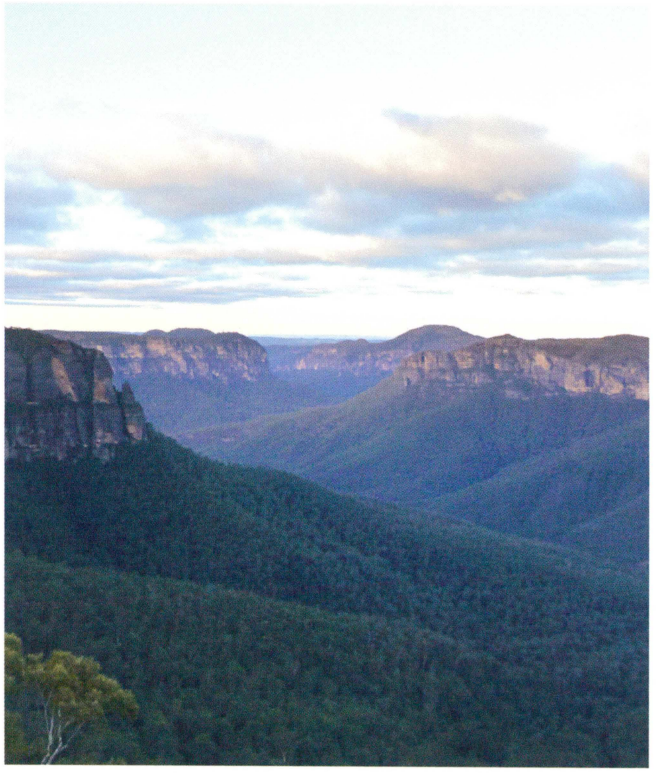
Scenic Railway Katoomba: Blue Mountains, NSW. Frank Hurley, 1910. Courtesy of National Library of Australia, nla.obj-159926801



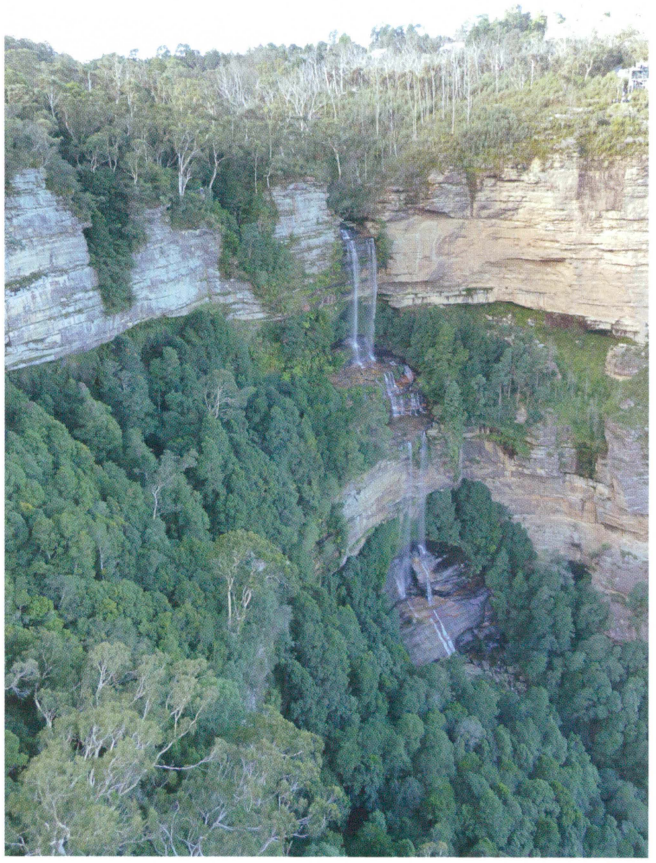
Blue Mountains - Scenic Walkway



Three Sisters, Blue Mountains



Grose Valley from Govetts Leap Lookout

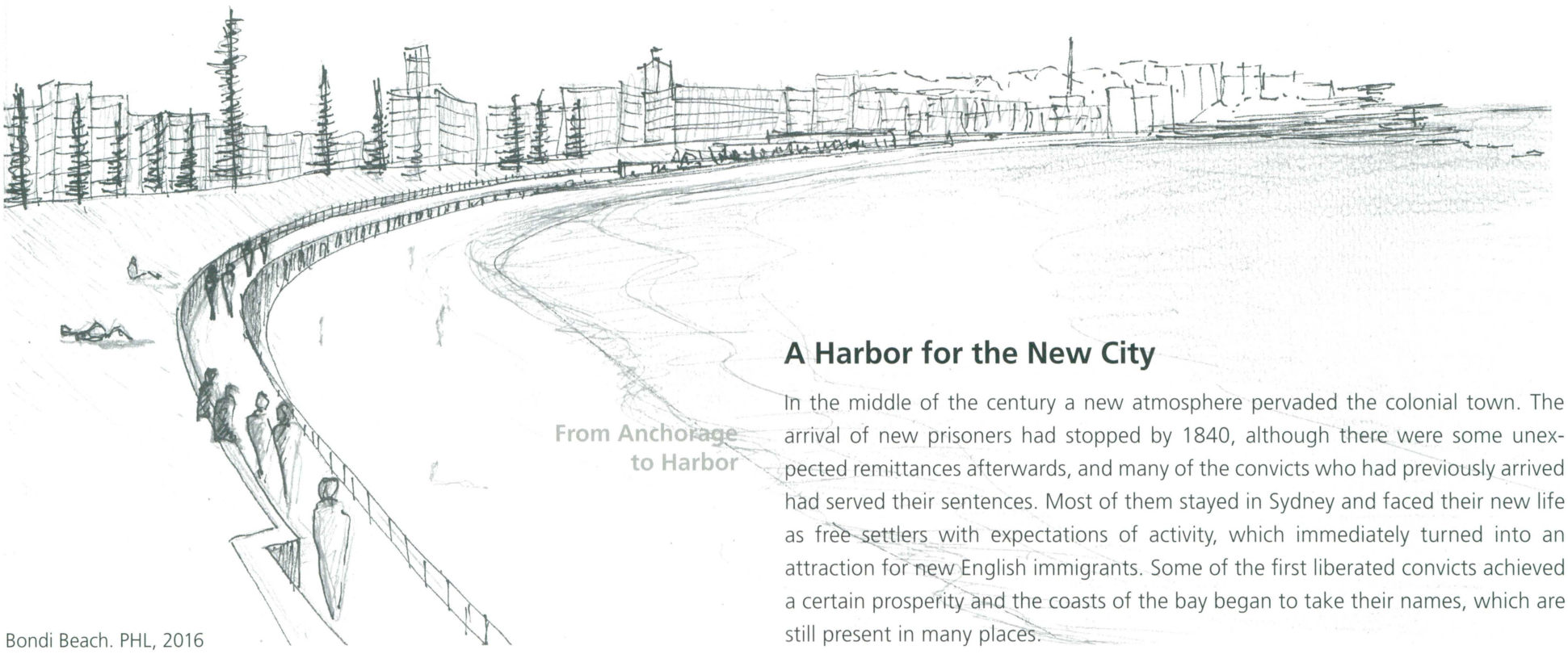


Victoria Falls, Blue Mountains



# 3 | Landscapes of Awakening

A Harbor for the New City / From Anchorage to Harbor / Knowledge and Action / Conflicting Pressures over the Harbor / The Drive of Wool / Wool Clippers / Woolloomooloo Finger Wharf / Pyrmont Bridge, Darling Harbour / Wood and Iron / The Swinging Section / Of Trains and Ships: Circular Quay / The Government Architect Office / Barnet's Production / Department of Lands, 1876 / Collection of Statues in Niches / The Look of the Past / General Post Office, 1891 / Colonial Mutual Life Building, 1893, 1976 / A Shared Block / St Andrew's Cathedral / Town Hall, 1889 / The Art Gallery of NSW, 1884 / Queen Victoria Building, 1898 / Roads of Expansion / Roads: Telford or McAdam / Streets Paved with Wood Blocks / Old Hume Road / The Bridges of Berrima / The First Concrete Arch in NSW / Buildings of Berrima / Original Structure of the Place / Railroads for the City / Privileges of a Young City / Bridges for a Difficult Landscape / Road and Railroad Bridges / Menangle Bridge over Nepean River, 1863 / James Waller Roberts CE / Railroad Bridges / Movable Bridges in the Bay / Northbridge, 1894 and 1937 / Iron Cove Bridge, 1888 / Meadowbank Rail Bridge, 1885 / Central Station, 1855, 1908 / The Polluted Stream / The Water of Lachlan Swamps / Centennial Park, 1888 / Edward Orpen Moriarty, Engineer-in-Chief / Upper Nepean Scheme 1880 / Hydraulic and Financial Resources / Professional Design and Management / Rushed by the Draught / Prospect Dam & Reservoir, 1888 / The Earthfill Dam / Landscape and Capacity of the Dam / Buildings and Gardens / Similar Water Supply Systems in the World / Canals and Heritage / Pollution of the Bay / Waste and Sharks / Need for Sanitation / Cooks River Sewage Aqueduct, 1895 / The Outburst of the Plague, 1900 / Parramatta Dam, 1856 / Paddington Reservoir Gardens, 1866, 2009 / Victoria Barracks, 1848 / The Sea Also Presides over Leisure / Ships, Beaches and Surf / The Beach as Public Good / Bondi Beach / Bondi Pavilion / Enjoyment and Sport / First Yacht Clubs / 'Sliding Sports' / Risks at Sea / Seaside Pools / Baths in the Bay / Shark Nets / Baths for Lifeguards and Champions / Horseraces in Randwick / Racecourses and Clubs.



Bondi Beach. PHL, 2016

From Anchorage to Harbor

## A Harbor for the New City

In the middle of the century a new atmosphere pervaded the colonial town. The arrival of new prisoners had stopped by 1840, although there were some unexpected remittances afterwards, and many of the convicts who had previously arrived had served their sentences. Most of them stayed in Sydney and faced their new life as free settlers with expectations of activity, which immediately turned into an attraction for new English immigrants. Some of the first liberated convicts achieved a certain prosperity and the coasts of the bay began to take their names, which are still present in many places.

The development of the coastal front for portuary or recreational uses was hampered by problems associated with land ownership. The continuous litigation motivated by sometimes precarious title deeds and by simple appropriations of use, more or less consecrated by the passage of the years, prevented the realization of works that seemed necessary, not only for the harbor, but also for the owners and their immediate neighbors (see Cremorne Reserve in Chapter 4).

Knowledge and Action

Little by little, the pressure of the new businesses put an end to these obstacles and the shores of the harbor were claimed for industrial, commercial or navigation projects, whereas a parallel interest arose in their protection for public use and the maintenance of their original beauty. The need was felt for many buildings and public works, and architects and civil engineers showed up to supervise their construction.

The need to strengthen the education system, for the country to promote the acquisition of knowledge, resulted in the founding of new universities and the expansion of existing ones. The star of the action, nevertheless, remained in the harbor, which turned into the thriving and conflicting center of all interests.

Conflicting Pressures over the Harbor

The activity spread through all types of industries, especially those linked to the construction of the city and its equipment, both institutional and commercial. The need for representative buildings of a society progressively liberated from its repressive role came hand in hand with the interest in the discovery of natural resources, particularly mining, creating new sources of conflict with the Aborigines. Both aspired to occupy the same sites, always linked to the harbor.

Some activities, such as essential shipyards, and docks and warehouses for maritime trade, required direct contact with the water and managed to establish themselves

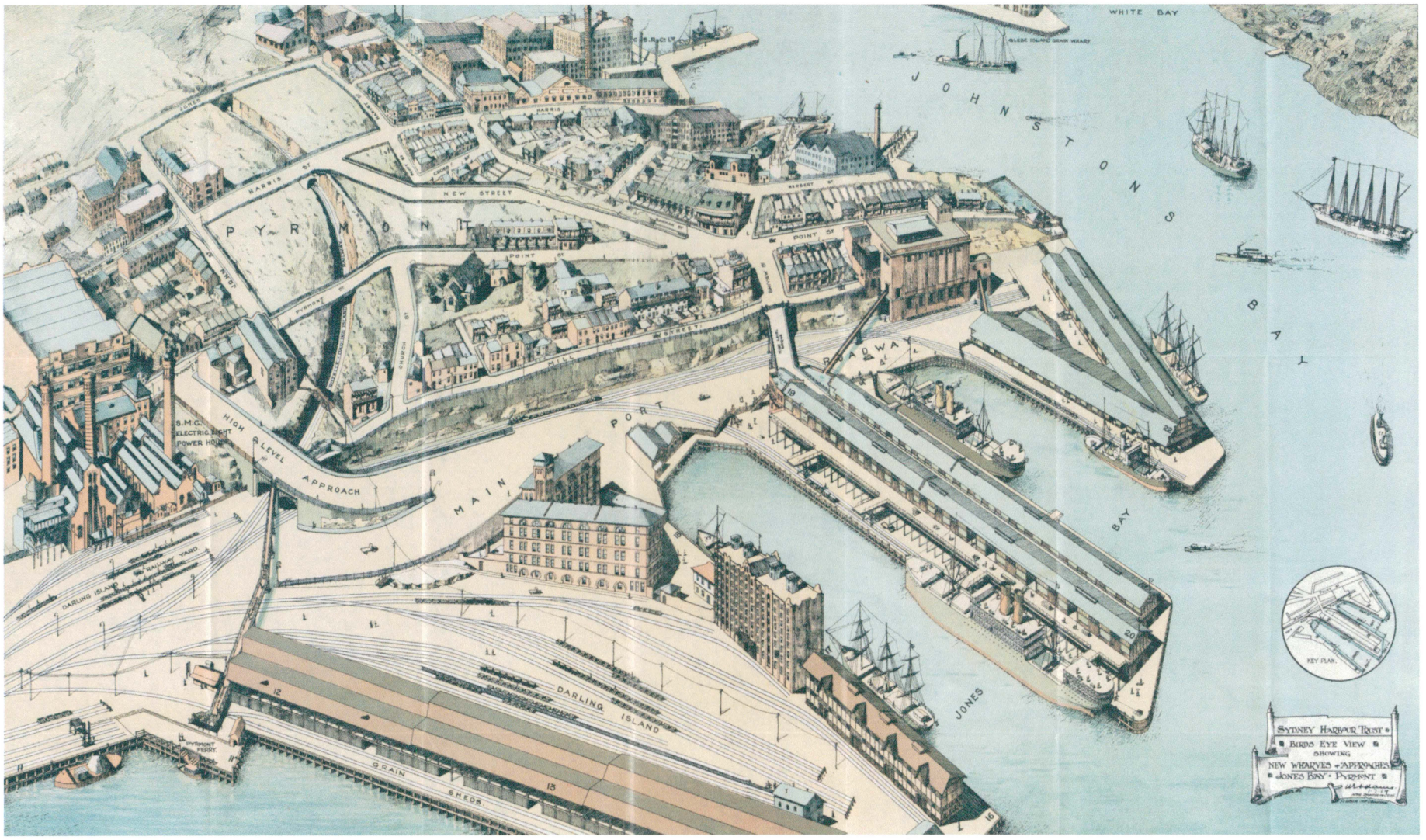








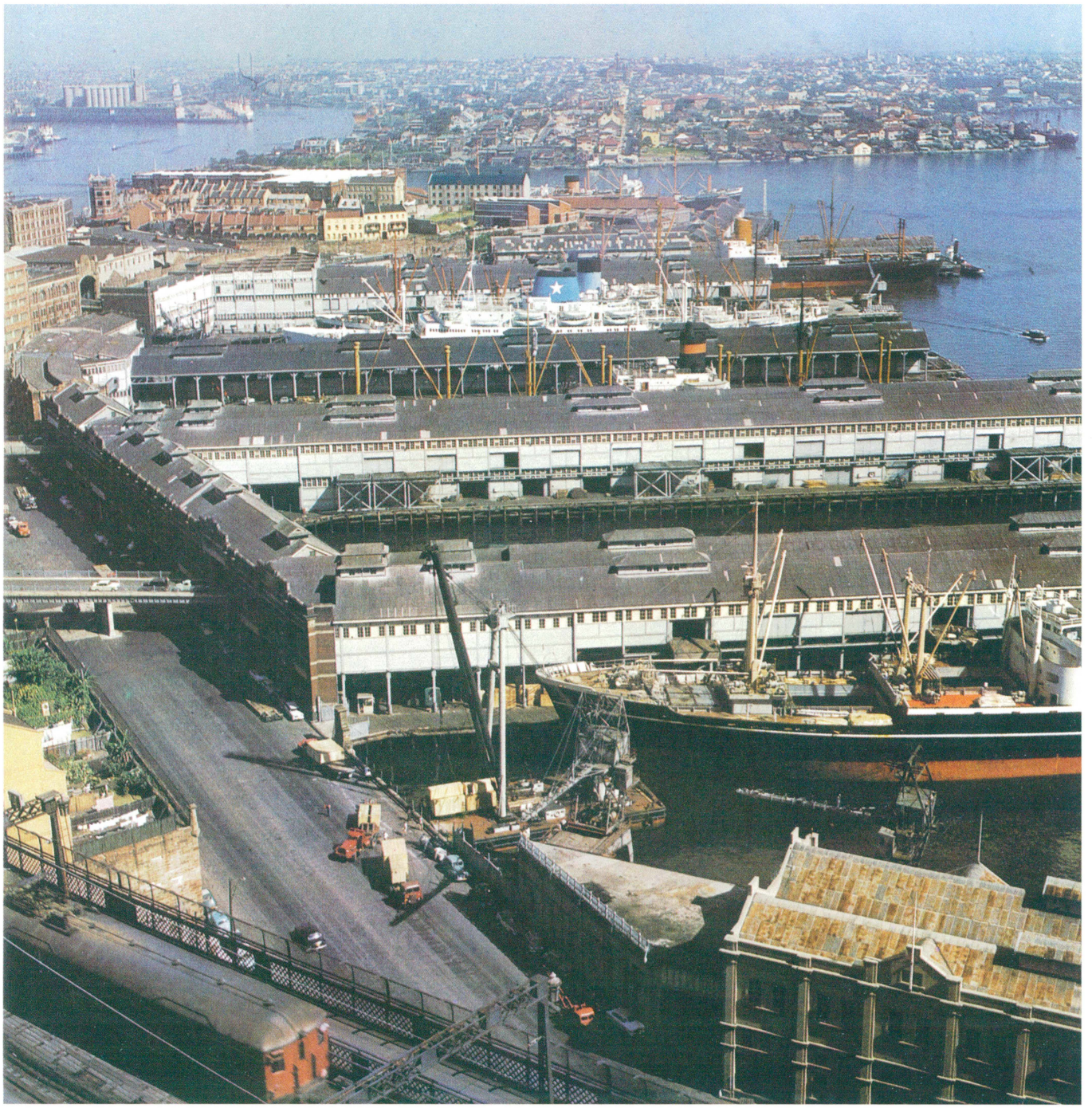
Sydney University, 1860




Bird's eye view showing new wharves & approaches, Jones Bay, Pyrmont. Sydney: Published by The Sydney Harbour Trust Commissioners, 1919. Courtesy of National Library of Australia, nla.obj-229933411



Fitzroy Dock, New South Wales, ca. 1880. Charles Bayliss. Courtesy of National Library of Australia, nla.obj-141509065



Walsh Bay, Sydney harbor [27:95]

more easily. But the proximity to the sea attracted many other uses for reasons more or less functional, but not so explicit and yet very destructive: the disposal of liquid or solid waste was one of them, with the ensuing deterioration of the bay itself, which would later require a gigantic sanitation program.

## The Drive of Wool

It would be, however, the wool industry which provided the city with its true drive, drawing the whole country to sheep breeding and wool production, and providing the strength of the national economy in the following decades. Wool gave life to the countryside, generated an entire industry, necessitated the construction of means of transportation and, above all, provided much maritime export activity, with important repercussions in the bay. Thanks to wool, in addition, Sydney and the whole country became known in the world and their international image began to change.

Wool was the great industrial success of Sydney: with its exploitation came prosperity, and the colony of prisoners was able to evolve into a city comparable to European and American cities. The harbor began to move large quantities of merchandise and its activity was transmitted to the city and gave it new life. Ships were specialized for wool transport, giving rise to a new type of sailboat, the clipper, optimized for that type of merchandise and for the round trips to London, as Joseph Conrad recounts in his book *The Mirror of the Sea.*

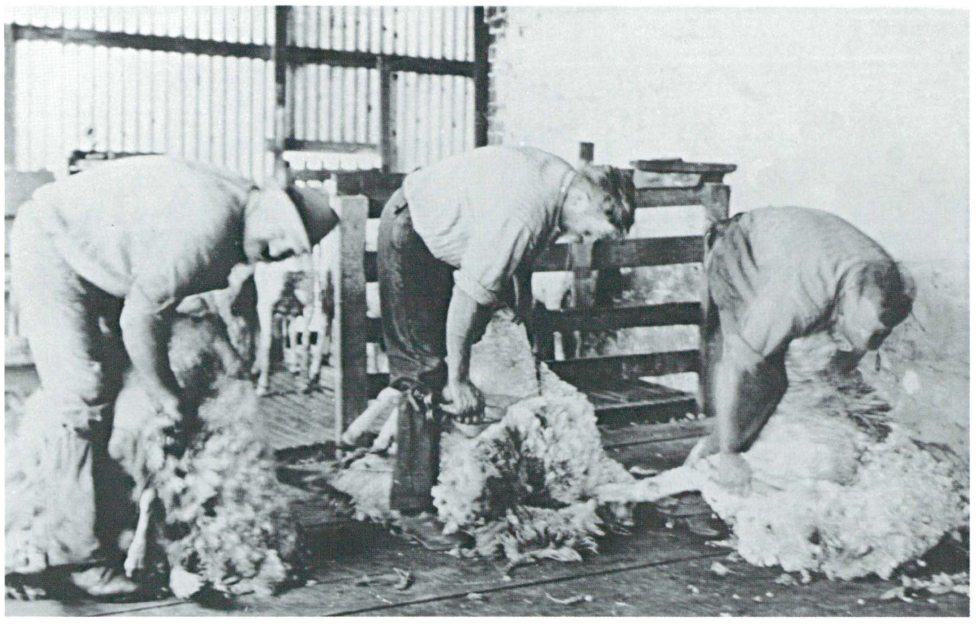
## Wool Clippers

*Those great (and last) days of smart wool-clippers, good to look at and —well— exciting to handle. Some of them were more fair to see than the others; many were (to put it mildly) somewhat over-masted; all were expected to make good passages;*



National Maritime Museum





Sheep breeding today. Image: Alfonso Herias García

Three shearers working on sheep, c. 1910. Courtesy of State Library of South Australia, B 16417/11



Woolloomooloo Finger Wharf from Sydney Tower

*and all that line of ships, whose rigging made a thick, enormous network against the sky, were ships specially designed for that cargo and for that passage, moulded on lines of beauty and speed —hulls of wood, of iron, expressing in their forms the highest achievement of modern ship-building—* [11:217].

In addition to admiring the ship, Conrad does not fail to point out its only, recurrent journey: *There was hardly one that knew of any other port amongst all the ports on the wide earth but London and Sydney, or London and Melbourne, or London and Adelaide, perhaps with Hobart Town added for those of smaller tonnage. One could almost have believed... that they knew the road to the Antipodes better than their own skippers who, year in, year out, took them from London —the place of captivity— to some Australian port* [11:206].

**Woolloomooloo Finger Wharf**

The long and narrow cove of Woolloomooloo, located to the east of the Botanic Garden, was a dock of intense port activity during the wool exports, prolonged today in its eastern pier by shipyards and a naval base. The splendid institutional city, with the governor's residence, the museums and the garden, recovers there the portuary ambiance, formerly only industrial, and now of more residential character. The cove is divided in two parts by the prominence of the famous Woolloomooloo Finger Wharf, a long pier[19] located at its center.

It is a dock of 410 m oriented north-south, with 64 m width occupied by two parallel warehouses at the edges and a vehicular access, also covered, in the center. The warehouses do not reach its northern end, where there used to be a large carpentry workshop, now replaced by a square building, aligned with them and also served by the central covered access.

This masterpiece of port engineering and industrial architecture was designed and built by HD Walls, engineer-in-chief of the Sydney Harbor Trust between 1911 and 1915, *combining tradition and local building materials with the most advanced technologies of its day, in an ingenious response to the three great challenges of commercial shipping: friction, gravity and time.* The work was vital to the port and began to operate in 1912, when the great wool clippers began loading and unloading while it was still under construction. In late 1980, the government decided to close the dock and rehabilitate it for other uses (see Chapter 5).

**Pyrmont Bridge, Darling Harbour**

The crossing of Darling Harbor was a substantial element for the construction of the city in relation to the port, as access to the areas of Pyrmont, Glebe and the western part of the city. The areas closest to the shore of Pyrmont Bay, and the following areas of Jones Bay, Johnstons Bay and Blackwattle Bay were occupied by factories, workshops and shipyards, generating strong flows of goods and people towards the city. The greatest obstacle to the establishing of a bridge there was the need to allow the passage of ships to the end of the cove, then the area best connected with the interior of the country.

In 1857 a first manually operated mobile bridge went into operation, built with ironbark wood, an Australian eucalyptus of thick bark and dense, hard and durable timber. Towards the 1890s, the forced replacement of the bridge motivated an important



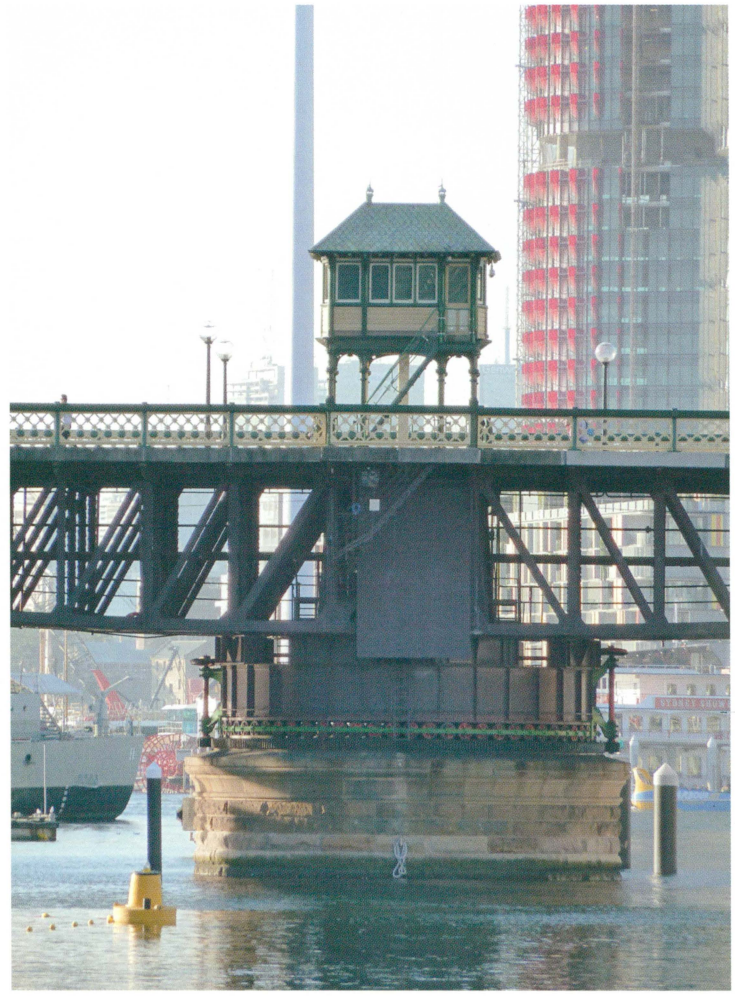



Pyrmont Bridge









Pyrmont Bridge

debate on the future use of the end of the cove, shallow and in need of constant dredging for navigation, and whose waters were contaminated by the discharge of waste. The option to fill up to Bathurst St and build a viaduct —prefiguring its present state— was clearly the best but, finally, the works required an excessive budget and the decision was made to build a metallic mobile bridge aligned with Market Street [42:21].

## Wood and Iron

The design of the new mobile bridge was commissioned from civil engineer Percy Allan (1861-1930), who introduced American wooden lattice bridges in Australia against pro-British tendencies, more inclined to the use of cast iron bridges, especially when it came to railway bridges. The American metal lattice designs gradually gained prominence over the English bridges, especially following an inspection trip to North America in 1894 by Henry Deane, chief engineer of the Railway Construction Branch of the Department of Public Works (PWD). The aim was to establish the most suitable types of bridges for the new routes of the first railway lines to the west in NSW [42:3].

The type of lattice chosen depended on the material. For wooden bridges, Deane found particularly suitable the Howe lattices, which are characterized by the compression of their diagonals, inclined from the center of the span towards the two abutments. In the lattice-beams of the Pratt type, on the other hand, the diagonals were inclined from the



Parsley Bay Suspension Bridge, 1910

abutments to the center of the span and worked by tensile strength, which could be replaced by cables. The choice of wood or iron depended on the opening of the span. He also preferred the possibility of supporting the rails directly on wooden crossbeams lying between the two lateral trusses, of cheaper construction and maintenance, to the classic inclusion of a wooden board covered with a layer of ballast, used until then [42:22].

Accordingly, the eight access spans on the Sydney side and the four on the Pyrmont side were designed with wooden lattices of 24.2 m span, joined by crossbeams and supported on half-timbered piers, instead of the initial solution with latticed arches of 10.5 m span. The Allen type lattices incorporated struts of steel braces, wood diagonals, which were crossed in the two central frames, and simple and inclined towards the abutments in the rest.

## The Swinging Section

The two central spans of 38 m were part of a set of two beams in cantilevered metal lattice in fish belly shape, supported by a central crown, able to rotate 90 degrees to give passage to the ships on both sides. The support was provided by a drum that rotates on a vertical axis and the machinery allows to move the 800 t of weight of the section in only 30 seconds.

However, the major innovation provided by the Pyrmont Bridge was the use of electricity produced at the nearby Ultimo Road plant to swing the central section of the



Maldon Suspension Bridge over Nepean River, 1903

bridge. With the power-driven machinery, the opening of the central span was the fastest in the world, although the Pyrmont Bridge board was the largest. The English moving bridges of the time —Newcastle on Tyne, Manchester Ship Canal and Hawarden— were smaller and the London Tower Bridge board was 1.2 m shorter in width. For all this, the construction of the Pyrmont Bridge in 1902 was considered a cause for national pride in an era of affirmation of the country.

At the opening ceremony, the Minister for Works, Mr. E .W. O'Sullivan described the bridge as the most modern of all bridges in the world [42:5], and its designer Percy Allan as *an Australian,* whose *work proves that the native born are giving evidence of high ability in every department of engineering, as they have already done in science, art, literature, music, vocalization, and sport* [42:37].

## Of Trains and Ships: Circular Quay

The 1909 *Royal Commission on the Improvement of Sydney and Its Suburbs* report, issued in response to a deep concern for the improvement of Sydney's physical environment, devoted priority attention to the mobility of passengers and goods. One of the key issues was the capacity of the freight docks and their destination once landed, which had great repercussions on access to the port and whether these should be by rail or by road.

At its meeting on 13 July 1908, the Commission inquired about transshipment, in order to determine the possible use of rail freight on the docks.[20] President Thomas Hughes, Lord Mayor of Sydney, along with eight commissioners, asked Henry Dean Walsh, M. Insfc. C.E, Engineer-in-Chief to the Harbor Trust in question 1371:

> *—You do not think the necessities of traffic at Circular Quay require the construction of a railway?*
>
> *—No —Walsh replies— I have some particulars regarding the matter: The number of berths at Circular Quay is nine. The length of the wharf is 4,132 feet. The inward cargo last year was 160,000 tons. The goods transshipped amounted to 60,000 tons, and the goods landed for the Government and the navy amounted to 9,000 tons. That gives 229,000 tons of cargo landed for the year. I have gone into the matter with those who know about it, and they say they are quite certain that not more than 6,000 tons of that would have gone by rail had the railway been available.*

The President asked for clarification to questions 1372 and 1373:

> *—It would all be handled by carriers and taken to the Sydney stores?*
>
> *—Yes —Walsh replies— A large amount of the goods going put from Circular Quay are transshipped goods. They consist of copra, low-grade concentrates, lead, timber, butter and wool. The concentrates, copra, lead and timber is nearly all transshipped stuff from vessel to vessel.*
>
> *—Is it not landed?*
>
> *—No. They also consist of shipments form the German and French possessions, New Zealand, Suva, and the South Sea Islands.*

The passage of the railroad at the level of the piers made it difficult to connect these with the city, since it required to detour people and vehicles when the trains were not in use. But it also required a steeper slope to climb to The Rocks, which would be the location of the abutment of the foreseeable bridge to cross the bay, for which there were already some preliminary plans. Meanwhile, there was also the question of the increasing demand for the daily transport of people, to be solved with surface trams or underground subways, and their corresponding access to ferry docks to reach the entire shore of the bay (see Chapter 4 infra).



Circular Quay from AMP Building


SYDNEY COVE 1788


CIRCULAR QUAY SHORELINE 1844
1844


THE WOOL FLEET 1892
3 of 20
SYDNEY HERITAGE WALK

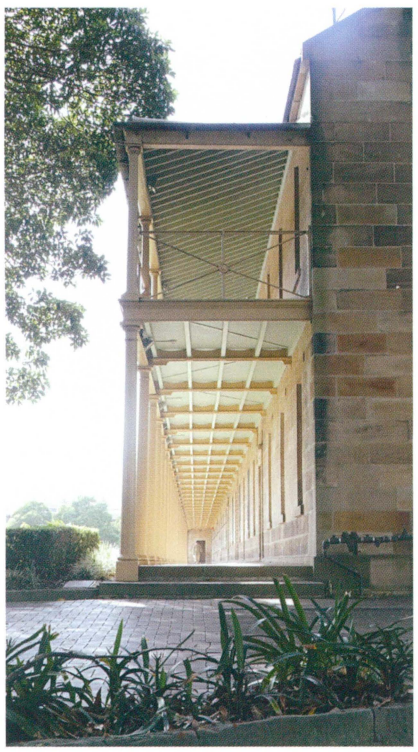



Circular Quay













## Victoria Barracks, 1848

The upper part of Paddington is occupied by a large stone building reputed to be the longest in the Southern Hemisphere. It is the so-called Victoria Barracks, built in the 1840s, and since 1970 headquarters of the Land Command and, more recently, the Defense Center of Sydney. The main block of two heights is 220 m long and is articulated in two wings, on both sides of a perpendicular and more imposing central body with a pitched cover, with the shield and an arcade passage. A long wooden balcony on the upper floor provides an unmistakable colonial atmosphere, highlighted by the wide front meadow, surrounding trees and other buildings in the same style. The whole is surrounded by a high stone wall, somewhat intimidating but effective to reinforce the chromatic and stylistic unity of the park and buildings.

It was designed by Lieutenant Colonel George Barney, of the Corps of Royal Engineers, who arrived in Sydney in 1835 to supervise the fortifications and buildings of the colony built by the convicts. The site chosen by Barney to build the barracks dominates the entire surrounding landscape, from Botany Bay to Sydney Bay and all other entrances to the city.

In addition to the strategic advantages of the site, Victoria Barracks enjoyed plenty of fresh water. The source of supply was a natural lake situated somewhat further south-east, in what is now known as Centennial Park. From there departed an underground pipeline to feed a main well and two secondary wells, from which the water was raised by means of a windmill later replaced by a steam engine. The first one is of greater diameter and is endowed with a staircase excavated externally, with independent access to facilitate its cleaning. The barracks always had abundant water and the system of conduction and wells worked until 1910, when all the water supply of the city was rebuilt.

The stone used in Victoria Barracks is sandstone from local quarries, and the cement was made with clinker of oyster shells from Sydney Harbor. The wood also had local origin, but the columns of foundry and the ironworks came from England. One of the most important supplies were the slate plates for the roofs, which were periodically sent from Wales, to deal with the frequent wreckage of storms.

In some of the buildings, like the one designated as Martial Court, there were problems of subsidence of the foundation sands and it was necessary to totally reconstruct the western part of the building where the viewing room is located.

In addition to the main building, the old hospital, with a similar composition in the northwest corner of the complex, is also of interest. It is located on a hill, with two rectangular plan floors with relatively high ceilings placed in a terrace that overlooks a well-maintained garden. It is the quietest corner of the complex, now dedicated to the Officers' Room and occasional residence for visitors, and venue for parties and some weddings, which take advantage of the gardens around the building.

To the north of the main building there is a large green esplanade lined with trees, back in the day used for training and parades, now increasingly sporadic. Delimitation marks have been drawn on the lawn, of the fields of several sports where rugby, cricket and soccer matches are celebrated. At the eastern end a perfectly level track has been arranged for bowling.[21]

## The Government Architect Office

When the city began its awakening in the last decades of the nineteenth century, the Government Architect Office —created by Governor Macquarie with the appointment of Francis Greenway— was the right instrument to bring about the great buildings that would grant Sydney its required character and status. In addition to being probably the oldest architectural studio in the world, it has built most of the official NSW government buildings, which have had a huge influence on the formation of the city. Post offices, hospitals, courts, schools, police stations, jails, lighthouses, fortresses and museums, which are the basic elements of any society with European roots, took shape from the hand of the colonial architect and his staff.

In Sydney, the Architect's Office has played a more lasting and important role than in many other cities for several reasons. First, the late foundation of the city and the type of its first settlers had not produced technicians sufficiently prepared to assume gradually the construction of large buildings. In addition, the construction industry was not sufficiently developed and, for a government of colonial origin, it was easier to appoint technicians of its confidence. Finally, when the society was ready to commission institutional tasks from private architects, starting in 1890, and began to engage in this practice like the other colonial cities, the Minister of Public Works awarded the second of his commissions to a personal friend of his, and the ensuing scandal assured the status of the Government Architect throughout the 20th century [47:8].

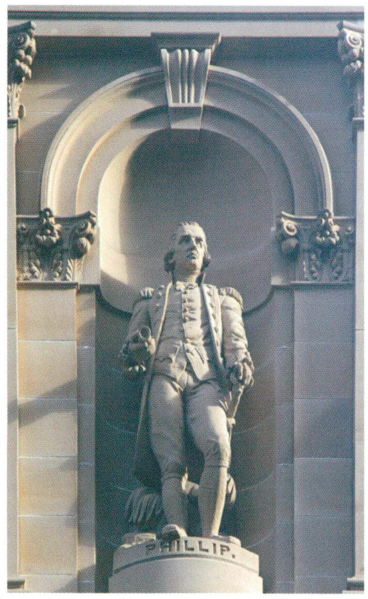
## Barnet's Production

During this time, the most relevant Government Architect was James Barnet, who held office from 1865 to 1890. During his 25-year term, the office designed 169 post offices, 130 courthouses, 155 police stations, and 20 lighthouses. While Greenway was by all accounts as difficult a personality as he was ingenious an architect, Barnet had a better character, embodying the rectitude and respectability of the Victorian era. All government buildings of the Barnet era proclaim their official position with their intimidating presence by playing with size, symmetry, location and sculptures.

Barnet's successor, Walter Vernon, was the first to adopt the title of Government Architect, and his architecture was both more expressive in public buildings and more respectful of existing urban landscapes. Although he also created equally impressive urban buildings, including the Mitchell Library and the Art Gallery, most of Vernon's work adopted the new looks and ideas of Arts and Crafts, Queen Anne and Art Nouveau —decorative styles often collectively referred to in Australia as 'Federation'— going beyond his architectural precedents in a declaration of artistic and cultural identity. Most fire stations, police stations and post office buildings, built by the Vernon office have a suburban scale and a joy that are absent from Barnet's work [47:10].

Greenway, Barnet and Vernon transformed Sydney's public domain by creating buildings and spaces that still populate the streets, and created a level of citizen demand that inspired and helped to set the standard for hotels, banks and other commercial buildings in the private sector.









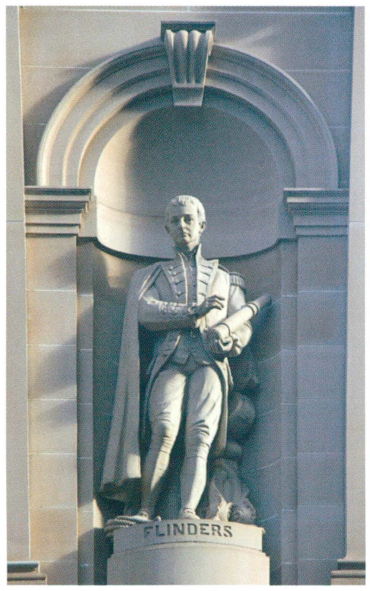












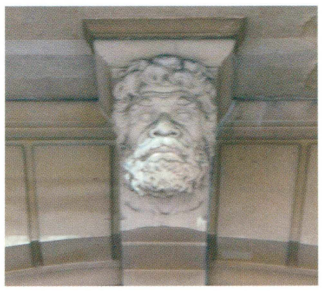


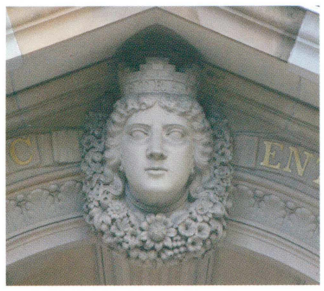


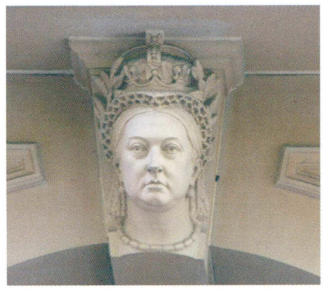




Department of Lands.
Series of niches with
sculptures












Department of Lands, 1876

Series of heads in arch keystones

## Department of Lands, 1876

The first significant use of concrete in a building was in the Lands Department Building on Bridge Street, where concrete with coke-breeze aggregate was used for the ceiling vaults over the arcades, and for the drum of the observatory dome. The construction period was long, about 17 years from 1876 to 1893 and, although it is not known in which date the concrete was used, it must have been towards the end.

The building was designed by colonial architect James Barnet, but the use of concrete was due to the recommendation of the contractor, John Young, and his architect, HC Kent, because they were *having difficulties in making a well-tied job in stone or brickwork and trouble setting out the centring,* reasons that persuaded Barnet to allow the use of the concrete [13:231].

## Collection of Statues in Niches

Its façades are profusely decorated with sculptures of heads in classic motifs and an orderly collection of niches with statues, producing elevations with the semblance of a neoclassical altarpiece. However, it is not a palace, nor a building with airs of grandeur, because the width of the gaps and the height of the doors have a contained scale, very suitable for a government office.

In each of the four sides there are twelve niches, designed to be filled with *statues of men who have distinguished themselves in exploration of the colony, thus leading to its development, or of legislators, responsible for promoting settlement in the lands explored. Only 23 niches have been filled including all 12 on the Bridge Street side facing Macquarie Place. The almost life-sized occupants of the niches are explorers, surveyors, and past premiers.*







General Post Office

*These sculpted colonial heroes and the heads over the entrances create a sense of being watched, surveyed from the vantage point of the 19th century, and of being in a place which is a context for remembrances and possibly, debates about the future. The sculptures and perhaps the building as a whole are not simply architectural metaphors for reading the text of the city, rather they can be read by urban dwellers and drifters as 'projections of contested remembrances'* [41:98].

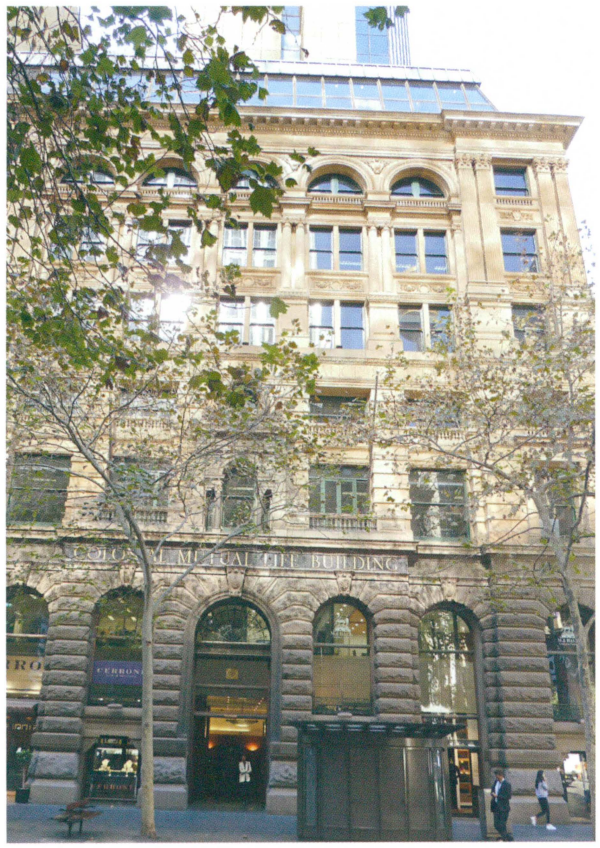
## The Look of the Past

The architect allowed himself to use all the classical compositional resources: the columns are Doric on the first floor, Ionic on the second and Corinthian on the third. The windows of the upper floor are all housed in the same strip but the opening is doubled with a mullion. There are overhanging cornices highlighting all the slabs, which turn into a large eave in the roof, supported on corbels placed in correspondence with the order introduced by the mullions.

## General Post Office, 1891

The General Post Office of James Barnet (1891) is now a multi-storey block of hotels and offices. The original building can be read as a sort of 'modern ruin': it has not deteriorated in the traditional sense of becoming a ruin, but its 'use value' has become obsolete and has been lost. As a result of this, and despite the fact that it was part of the urban fabric and architectural heritage, and a beautiful public building, it was leased to private developers in 1996 and demolished in large part.

Now just a simple shell, a façade, remains. It was, like the Department of Lands, a wonderful idiosyncratic construction, with its façade decorated with sill heads and figures. Some of them are comic and represent ordinary people, including an Aboriginal man whose head appears just below the sculpture of Queen Victoria, placed on the



Colonial Mutual Life Building

### Colonial Mutual Life Building, 1893, 1976

entrance, as well as heads of Pacific islanders. This decorations caused a great deal of controversy, damaging the reputation of Barnet to the extent that he was not invited to design the Art Gallery of New South Wales [41:257].

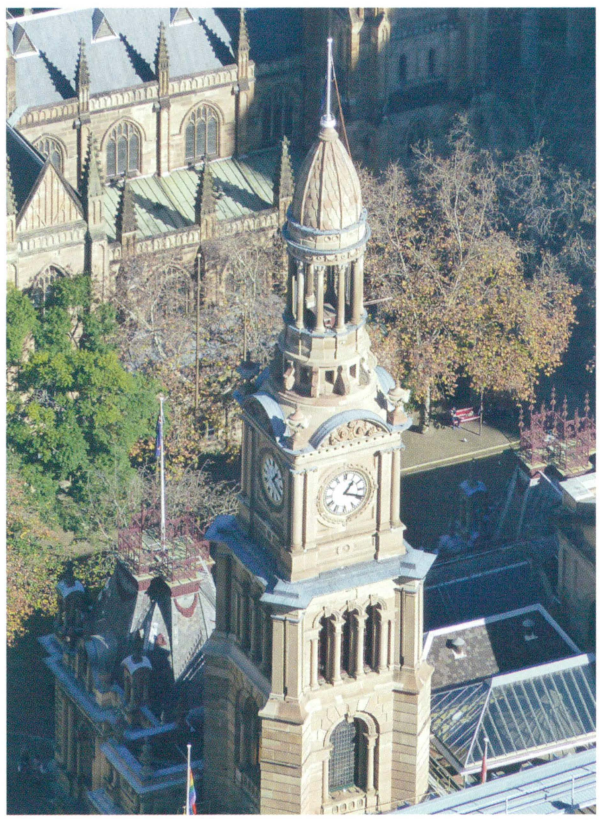
The Colonial Mutual Life Building, also known as Old Colonial Mutual Building, is the work of the Sydney architect John Kirkpatrick, although only the façade of the primitive building from 1893 remains of it at the corner of Martin Place with Pitt St, integrated in 1976 as part of the complex of the General Post Office.

It is one of the oldest examples of Sydney's public square façades. The structure of the building is of steel beams on cast iron columns, with external bearing walls in stone. In 1930, floors 7 and 8 were demolished and four more floors were built. In 1976, a 20-storey building was built there, retaining the previous façades, with a design by Joseland & Gilling.

### A Shared Block

It is unusual for a town hall and a cathedral to share a block, and in Sydney this became circumstantial over a period of almost two centuries. In 1807, this area on the outskirts of the city, located on the highest point of George St, beyond the watershed of the Tank Stream, had become a cemetery. Next to it, in 1812 governor Macquarie designated the site of a cathedral —and a "great square"— designed by architect Francis Greenway. However, neither the cathedral nor the square were built.

Originally the City Council was close to the markets of the area, in the current Queen Victoria Building, and in 1842 the City Council asked the Government to grant the Old Burial Ground next to Saint Andrew's to build there the Town Hall. After prolonged negotiations, the City finally attained the concession of the plot in 1869 and was able to exhume the bodies and transfer them to other cemeteries.



Town Hall from Sydney Tower

### St Andrew's Cathedral

The construction of the Anglican cathedral of St. Andrew began with a design by James Hume and was carried forward by Edmund Blacket starting in 1842. Blacket expanded the project and completed the slender towers, the deanery (currently demolished) and the chapter house. Following tradition, the towers and the major doorway faced west, to an unconnected south-east stub of Clarence St. On the opposite side of the street, other Protestant chapels were built, resulting in certain confusion in the orientation of the Cathedral, whose obvious main façade is that of George St.

### Town Hall, 1889

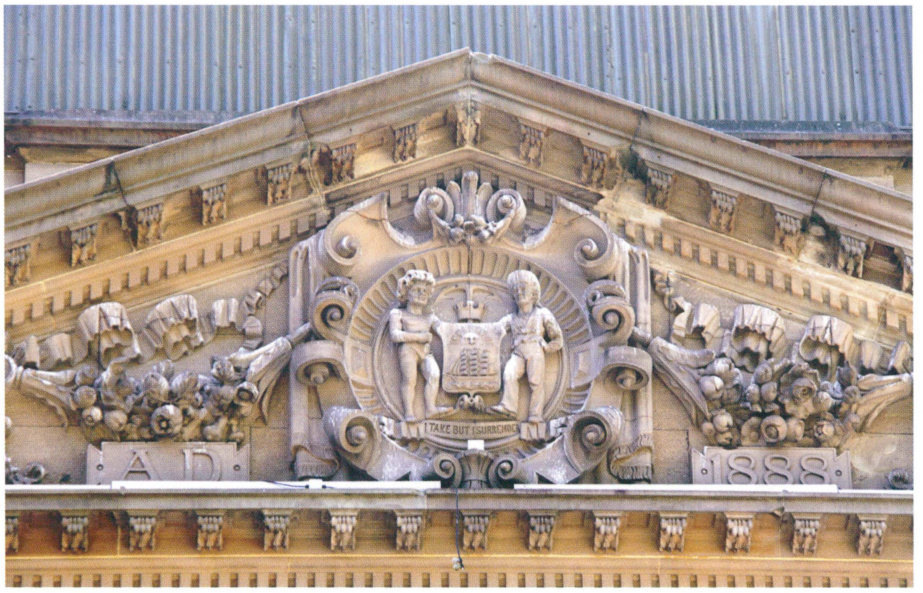
Later, several architects intervened in the Town Hall, giving rise to a recharged and eclectic building, with elevations where a double-height tetrastyle portico with four-fold columns flanked by Palladian windows appears; towers with mansardings in the corners; a high central tower in three sections with clock and upper lantern; and an ornate pediment with the shield of the city in its center, among many other elements.

More interesting is the spacious Centennial Hall, built as the central room of its floorplan by architect Thomas Sapsford in 1889. It is a large room, 40 m long, 26 m span and with a height of 20 m, with capacity for a sitting dinner for 800 people, cocktails for 1500 or a show for 2000 seats, presided over by an immense organ, which required special precautions in the ceiling lamps to withstand its vibrations.

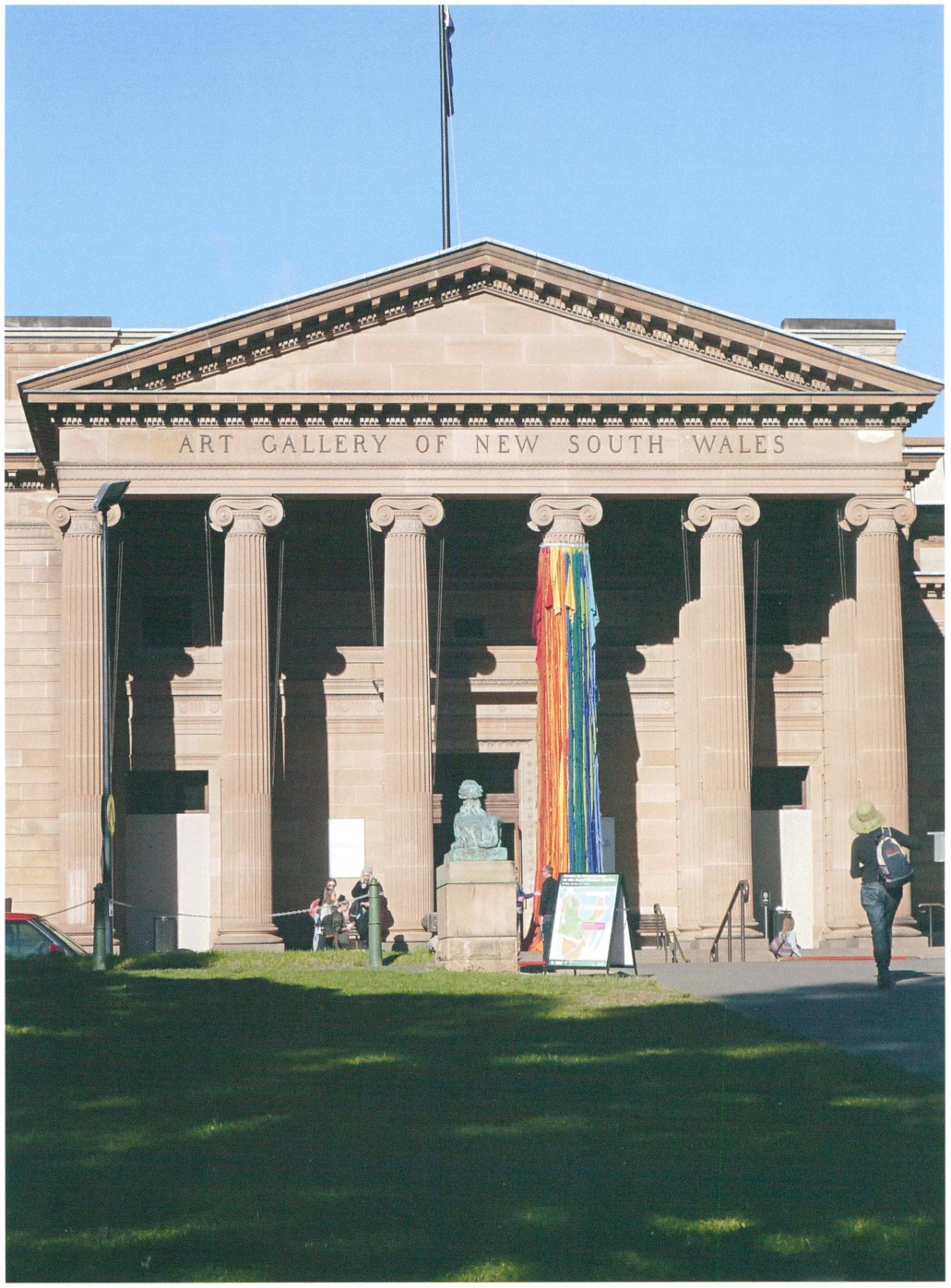


Bird's-eye view of Sydney, 1888. Albert Henry Fullwood. Supplement to "The Sydney Mail" on Saturday 21 January 1888. Courtesy of Historic Houses Trust of New South Wales. Caroline Simpson Library & Research Collection, 41984






Town Hall

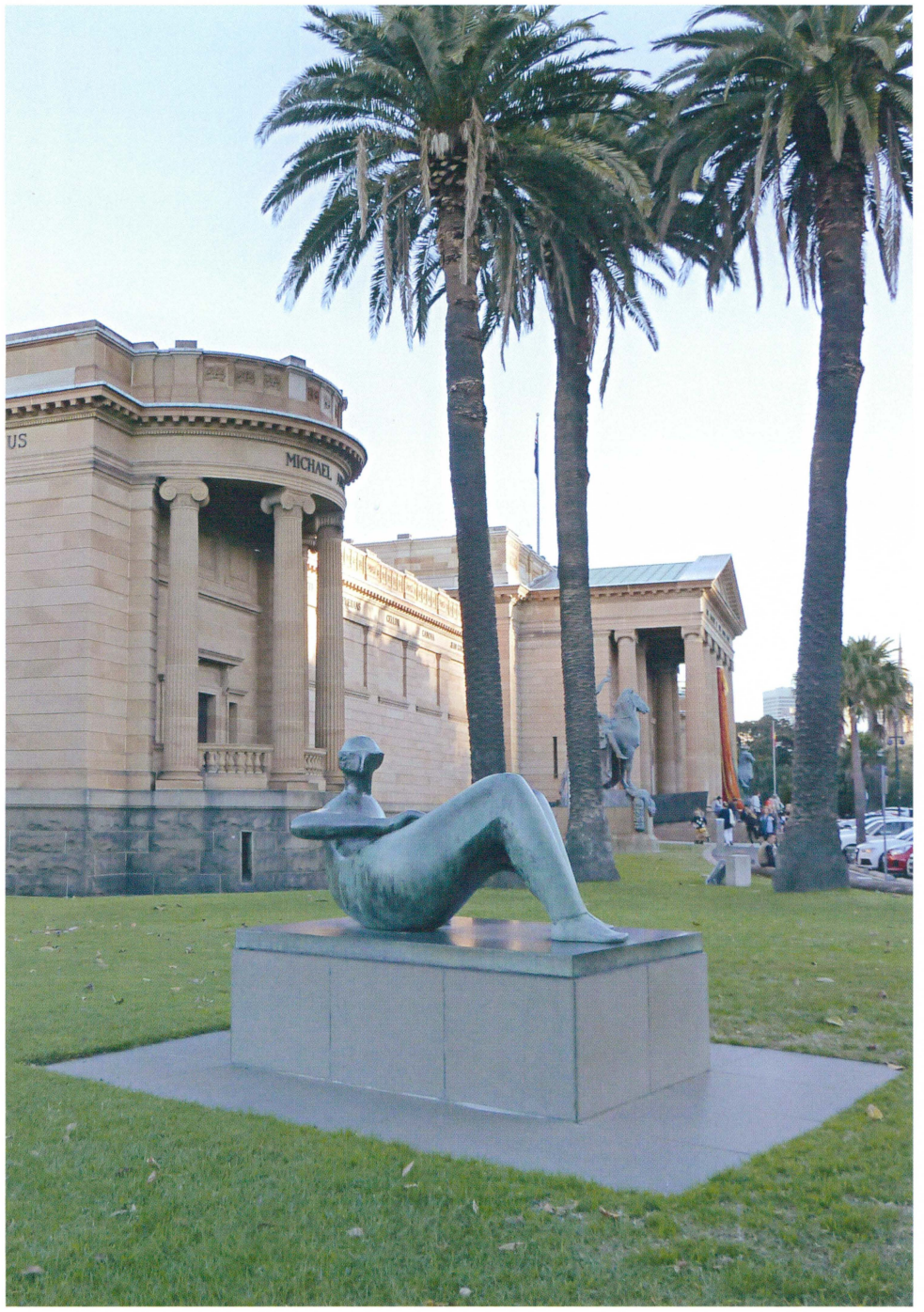





**The Art Gallery of NSW, 1884**

The Art Gallery of NSW *stands alone in Greek Ionic splendor* on a hill overlooking Woolloomooloo Bay. It is located within the great green expanse of the Domain, known as Sydney's Common in the early days of the colony, and it is reached from the Domain, rising gradually towards the neoclassical portico. The two bronze sphinxes on plinths placed on either side of a series of steps mark the way to the museum.

According to Susan King, the architecture of the Art Gallery shows the struggles between modern and anti-modern that took place in Sydney from the interwar period to the mid-twentieth century. It was built in the Domain, like its neighboring State Library, after the Garden Palace fire in 1882.





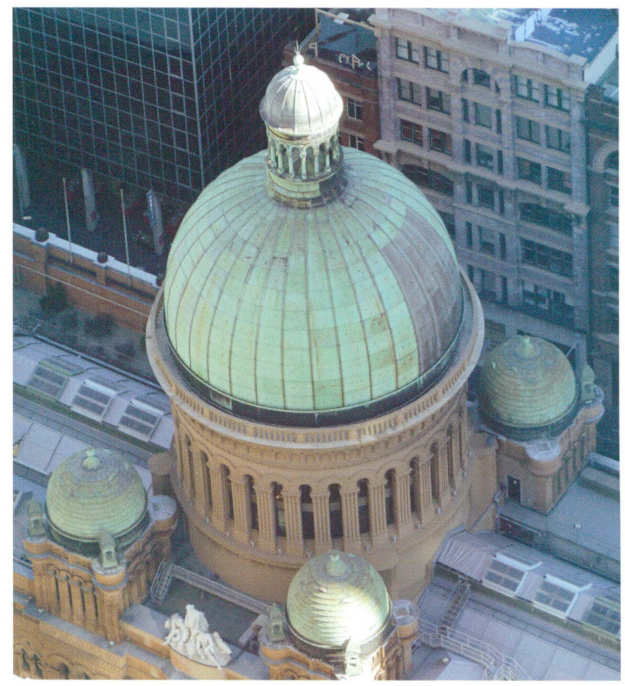



Art Gallery of New South Wales

The neoclassical portico displays cultural authority suggesting, as it does, a temple to Greco-Roman art and civilization, a style demanded by the Museum Board and by the city itself, as it strove to enter the 20th century fully equipped with all the institutions essential for a post-colonial future.

*The colonnaded portico is imposing, but perhaps because of its location looking out over green lawns and trees, it has the vernacular air of an Australian verandah. At any time, people are seated in a relaxed manner on the benches or the steps: the entrance positively invites such domestication and I take up this invitation to sit on the steps and watch the panorama unfold around me* [28:245].





## Queen Victoria Building, 1898

One of Sydney's major buildings in the period of transition from foundry to steel is the Queen Victoria Building, completed in the 1890s and extensively renovated recently.

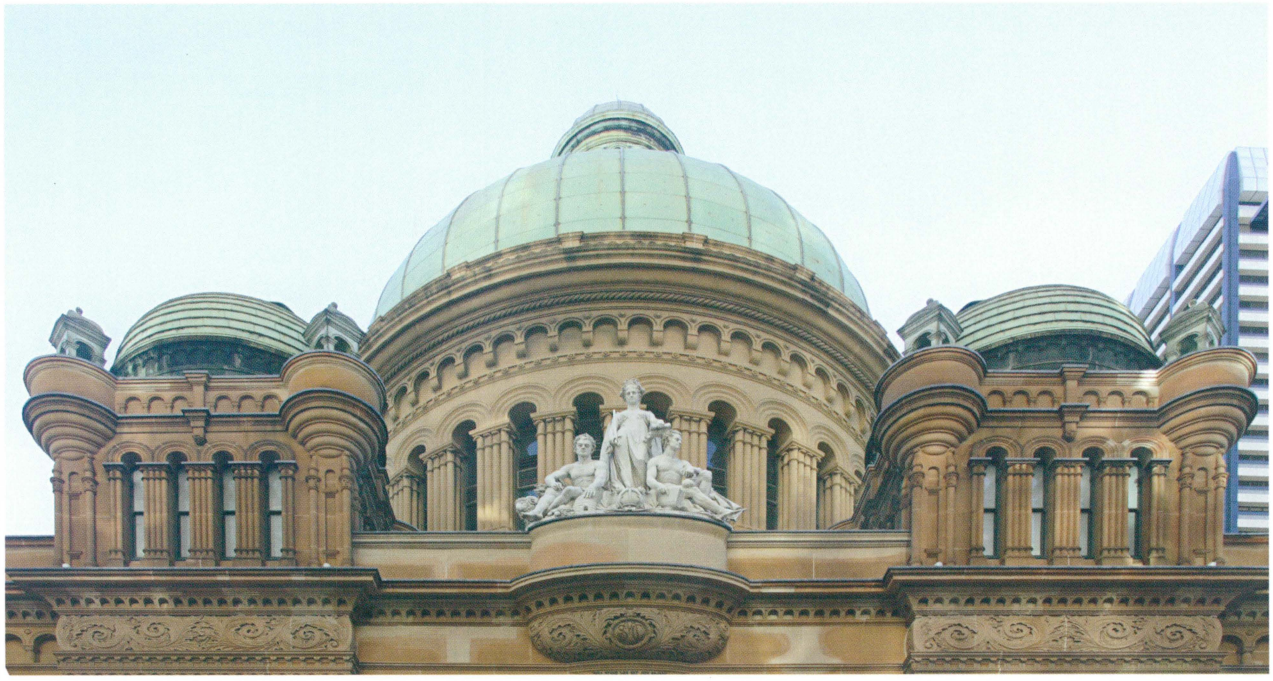
The Queen Victoria Building (1893-1898) was designed by architect George McRae and structural engineer George Massey as a large commercial gallery. The exterior walls are of sandstone and the entrances are decorated with polished trachyte. The external structure is a mixture of stone bearing walls and a structural skeleton of cast iron and steel, but the walls are supported from the first floor by steel beams on trachyte columns.

The inner columns are cast, but some are heavily loaded with rolled steel. Wood and foundry were used for many horizontal structural elements, except for some heavily loaded beams which were made from rolled steel sheets imported from England.

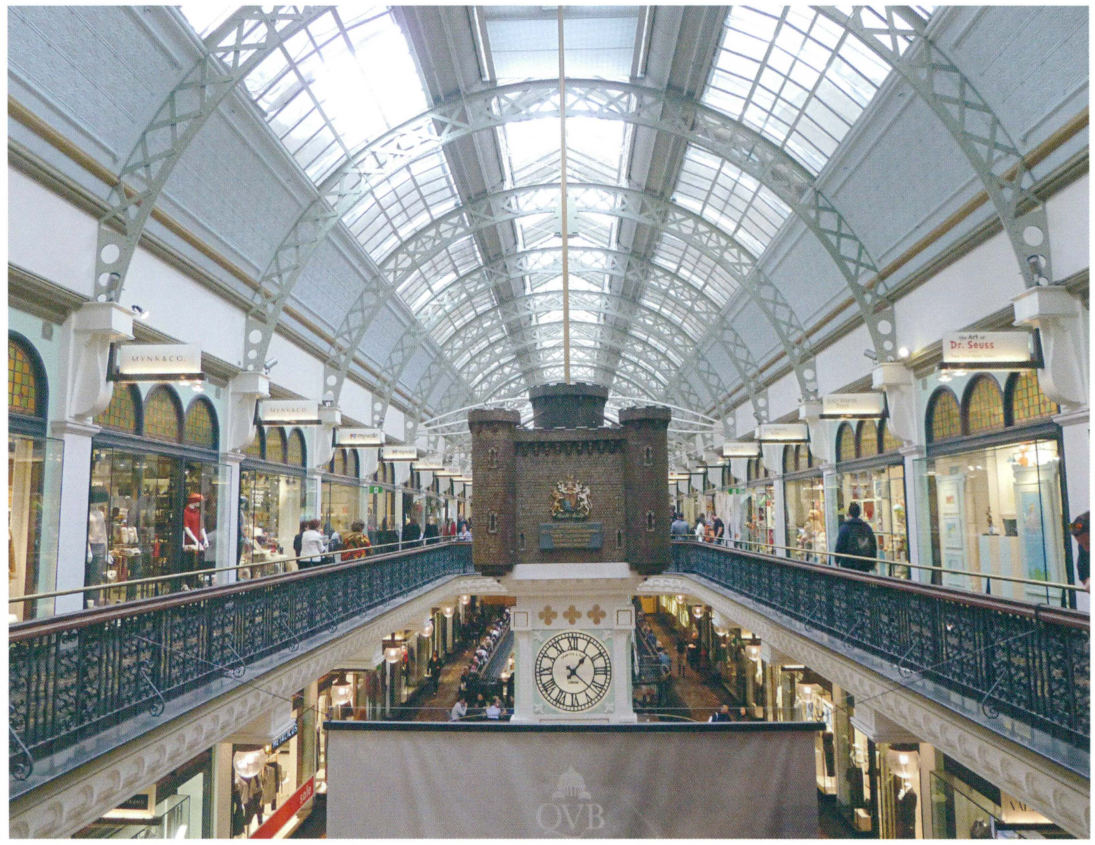
The building is long and narrow, with fairly ornate elevations and a complex covering with five groups of four small domes, in the two corner blocks, towards the middle of the wings and in the central square that, in turn, is crowned by a dome of larger diameter, located in the center and raised on a drum.

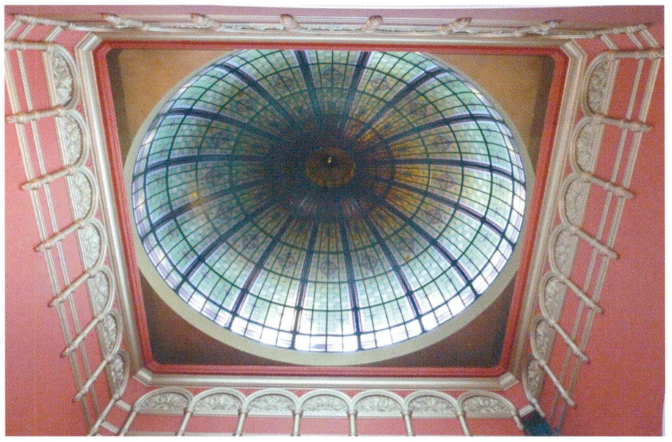
The small elevations are adorned with sculptural groups located at the edges of the roof.

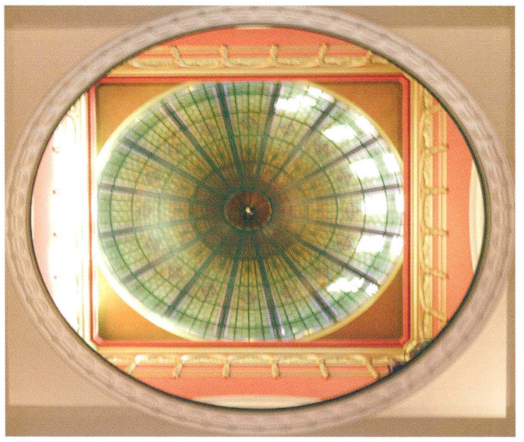
The interior is organized around two openings at the whole height of the building that allow you to see the iron and crystal vaults. The ceiling is treated in soft gray with translucent glass, but the large stained glass windows provide a fine and colored texture, in contrast to the strong, solid and intense colors of the walls. The pavements are decorated with large mosaic circles and stars. A large clock hanging from the ceiling indicates the cosmopolitan character of the building, indicating the time of cities and countries of the five continents.



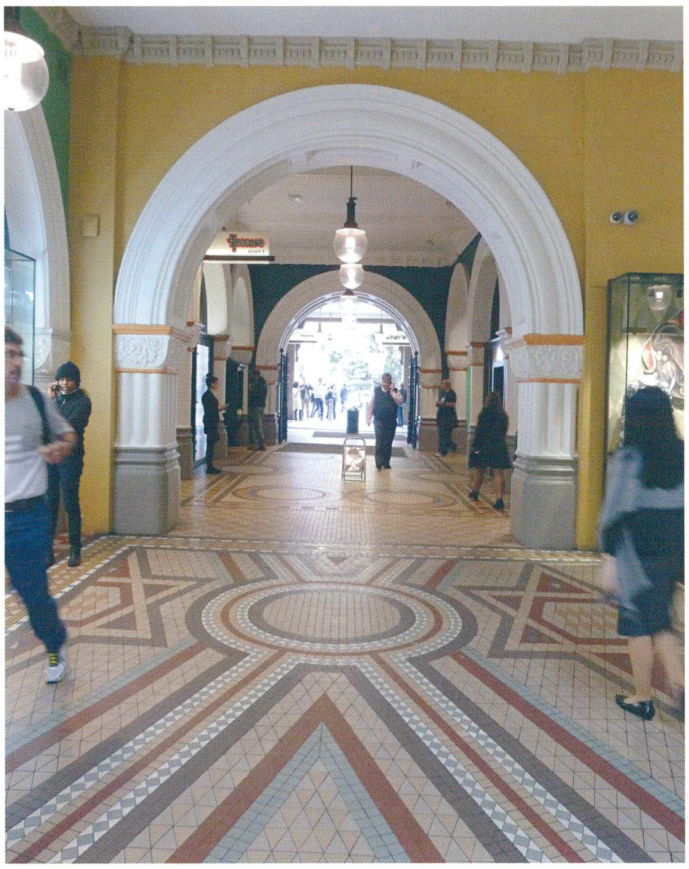



MYNK&CO.
Dr. Seuss
QVB

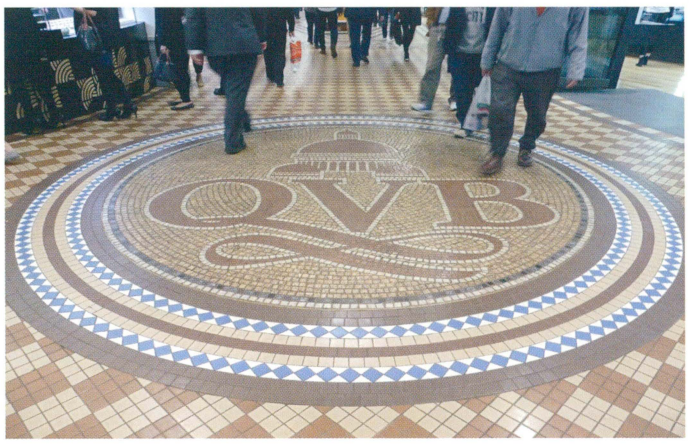




Queen Victoria Building

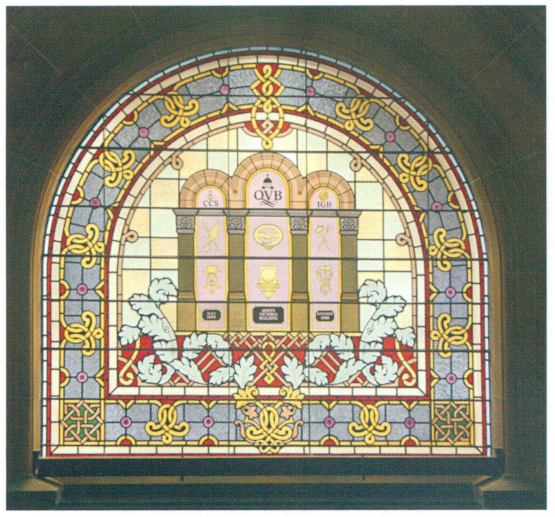






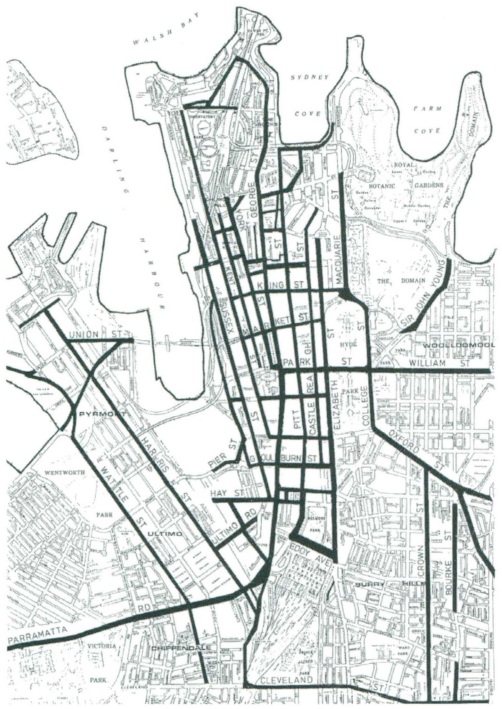













Wood streets in Sydney [23:49]

Roads: Telford or McAdam

## Roads of Expansion

For its part, the Public Works Department assumed responsibility for all roads since 1861 in colonial NSW, and construction with macadam was adopted as standard practice. As practiced in NSW, macadam was actually a combination of two types of road pavement developed in England by Thomas Telford and John McAdam during the early part of the 19th century. Telford roads had a substantial base course of hand packed stones and a generous layer of graded gravel above. The road was durable, but expensive to build. The macadam dispensed with the stone base-course and reduced the thickness of the gravel, thus reducing road costs, with the drawback of a shorter duration requiring more frequent repairs. In spite of this, the long-term costs of the McAdam system are lower and with this system an extensive network of roads was built in England and a version of his name became popular all over the world.

However, insufficient funds in government budgets for urban roads prompted municipal councils, such as the Sydney City Council, to finance the construction of their own roads. Most of Sydney's roads were originally in macadam, so that by 1894, there were 85 miles of such roads, over a total of 115 miles of streets and alleys in the



Angel Place



Road network

Map of Sydney and suburbs, 1855. Smith & Gardiners. Courtesy of City of Sydney Archives - Historical Atlas of Sydney

Royal Lounge, Angel Place







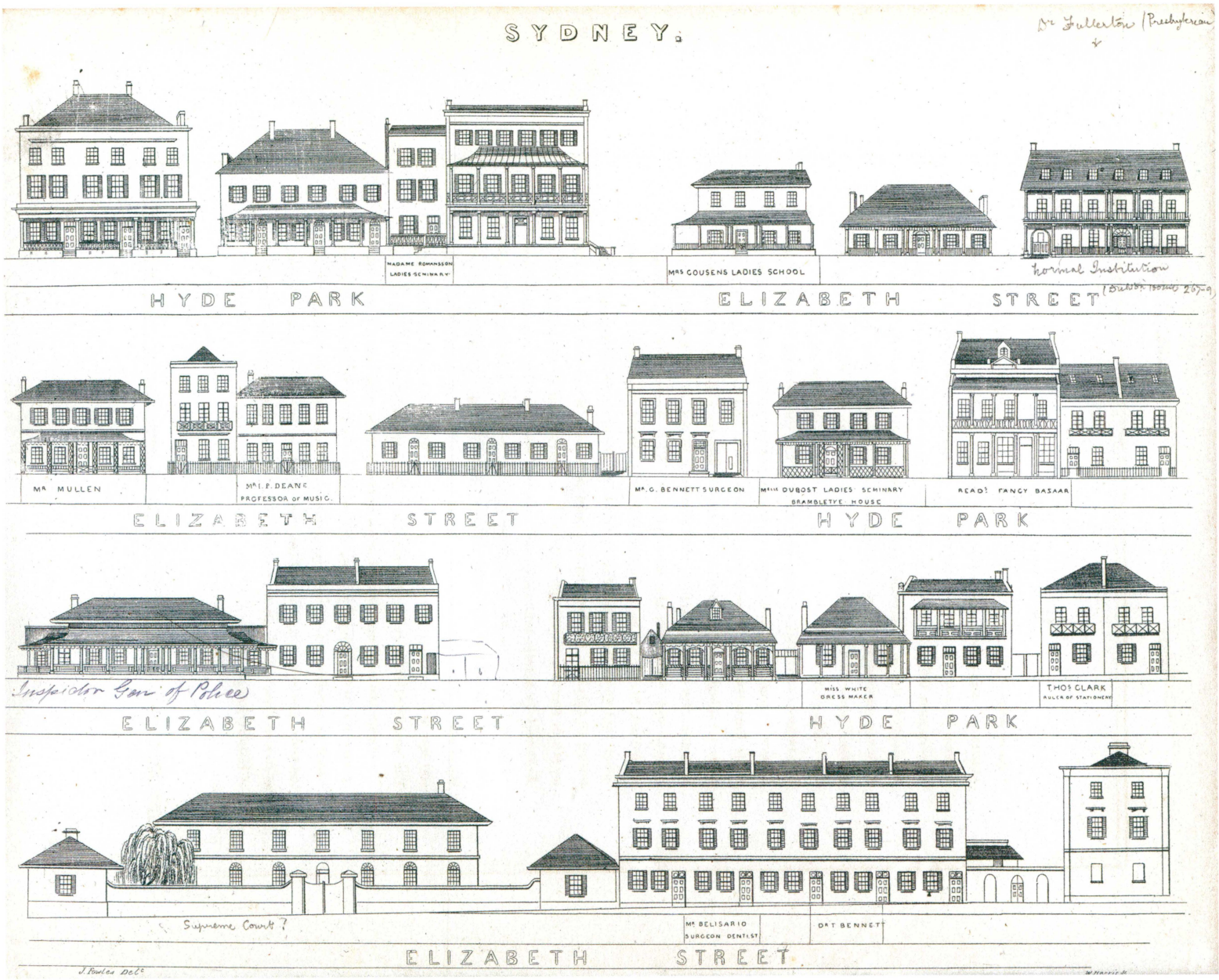



## Streets Paved with Wood Blocks

area controlled by the City. But when it was necessary to rebuild the most heavily trafficked streets of the city, the City Surveyor (engineer) chose to avoid Telford's construction method, despite its clear advantage in strength, and adopted a wood block pavement on a base of concrete.

After multiple trials with different types of wood, two species of eucalyptus, *Eucalyptus pilularis* and *Eucalyptus microcorys* were identified as being more suitable for pavements, since they were the ones that suffered less wear and caused less noise. It was also found that the alignment of angled wooden blocks with the shaft did not offer any advantage and that the wood block roads were 10% cheaper than those of macadam.

Their usage also verified that their maintenance cost was smaller than initially foreseen, and that they lasted more than 30 years. And, being more waterproof, they needed less lateral slope than the macadam, facilitating the introduction of trams




Elizabeth Street Hyde Park, 1848. Plate 68A. From the book: Fowles, Joseph: 'Sydney in 1848: illustrated by copperplate engravings of its principal streets, public buildings, churches, chapels, etc. / from drawings by Joseph Fowles.' Sydney: D. Wall. Courtesy of City of Sydney Archives, oai:cos.photosau.com.au:087536

in the streets of Sydney. On the other hand, the narrowness of the streets increased the formation of ruts on the surface of macadam, forcing the vehicles to always travel through the center.

Considering all this, it was decided to start a series of construction programs that managed to pave with wood most of the streets of the center and the main ones of the suburbs, much more than any other city in the world. In total, 50 km of streets were covered, with a total of 60 ha, for which were used 100 million blocks of eucalyptus wood, 22.8 x 7.6 cm in section and 12.7 cm in height (9 X 3 x 5 inches), placed with the fiber vertically [23:49].

## Hume Old Road

The construction of the Old Hume Highway from Sydney to Canberra, during an era of exploration and expansion in New South Wales, led to the birth of many villages at the crossings of the important rivers. In the geographic center of Camden County, 125 km from Sydney and 162 km from Canberra, the municipality of Berrima[22]

Hume Highway Duplication crossed the Murrumbidgee River flood plain at Gundagai by a long narrow timber trestle structure. RTA Transparency. Mike Pratt, 1976. Courtesy of Transport Roads & Maritime Services, NSW Government

Old Hume Road









Berrima Bridge over Wingecarribee River

Hume Highway Duplication. Courtesy of Transport Roads & Maritime Services, NSW Government

was founded in 1829, with a role of industrial and administrative center of the districts of the south. The section of highway that includes it was denominated Great Southern Road in 1858 and renamed Hume Highway in 1928.

The village emerges as a product of the planned crossing of the Hume Old Road over the Wingecarribee River, on grounds inspected by Surveyor General Sir Thomas Mitchell, who notified Governor Bourke of its abundance of water and building stone as he made the road to Goulburn. This Georgian village of high historical value and heritage importance is the best example of preserved early colonial architecture in the country.

In the south, Old Hume Highway forms part of Remembrance Driveway, a memorial established in 1953 to commemorate those who served in World War II and later conflicts. In 1954, the Queen planted trees on each side of the causeway and the planted areas on both sides preserve monuments with the names of the benefactors who sponsored the landscaping of the area.

Also to the south of Berrima, the Three Legs O'Man Bridge over the Hume Highway marks the change in design of the Hume Highway Road, of unrestricted use with access to a different level to the north, and of controlled access with limited crossings towards the south. The new Hume Highway circumvented Berrima in 1989.

## The Bridges of Berrima

The layout of the road and crossings required the construction of a large bridge at the height of Berrima and two smaller bridges further south. The design and construction of these Public Works was entrusted to David Lennox, who under the command of Sir T. Mitchell was named *Superintendent of Bridges* in 1833, and who, on that same year, chose the site to locate the bridge over the Wingecarribee River in Berrima.[23]

The design of the bridge follows the lines of Lansdowne Bridge in Prospect, with a sandstone arch of 15 m span and 8 m width. It was built by convicts in 1836 and withstood road traffic until 1857, when a flood washed away the deck. A temporary structure of beams and planks of wood was constructed, that was demolished by another flood in 1860 that also took the stone piers. The royal engineers sent to replace it built a robust lattice structure on two stone piers, some 44 m downstream.

Berrima Holy Trinity
Anglican Church



Berrima Masonic Hall
School of Arts



## The First Concrete Arch in NSW

In this place the Berrima Bridge over the Wingecarribee River is currently located (Department of Main Roads, 1962), made in concrete and of purely utilitarian character. The two smaller bridges were also designed by Lennox and built by convicts.

In Medway Rivulet, about 5 km south of Berrima, a wooden bridge supported by three piers of masonry was completed in 1835, which was also felled by the floods of 1860. A little further, 12 km south of Berrima, a structure of wooden beams was erected in 1836 on Black Bobs Creek leaning on stone piers and abutments on a solid mass of rocks.

In 1860, it was replaced by another wooden bridge, and in 1896 by a concrete arch. This old structure, still standing, was the first concrete mass arch bridge built in New South Wales. The arch rests on the original sandstone piers and abutments of 1830 and withstood traffic until 1928, when the road became Hume Highway. As part of





Berrima Harper´s Mansion, 1834

Berrima Houses





Berrima Old Well

an important realignment of the road, in 1971 a new two-way bridge was built, putting the old bridge out of use and catalogued by the National Trust.[24]

### Buildings of Berrima

In the north access to Berrima, the Harper's Mansion is still preserved, a brick building of two flights with a remarkable garden and labyrinth. Built in 1834 by James Harper, it was later used as a presbytery and convent, purchased and restored in 1978 by the National Trust. Harper was the first to obtain a hotel license for the Surveyor General Inn (1835), one of the thirteen inns built to house travelers on the road, always with a lot of carriage and stagecoach traffic. Built on a rock that allowed the digging of cellars in the basement, it is still operational and is the oldest licensed hotel in the country.

Many of these buildings have been rehabilitated as hotels, restaurants, cafes, tea houses, galleries and shops. One of them is Berrima Breen's Commercial Hotel of 1869, the last hotel to close, which reopened in the 1970s as a Colonial Inn restaurant and is still in operation.

### Original Structure of the Place

With the construction of the railroad to the east of Berrima in 1867, the new cities of Bowral and Moss Vale surpassed Berrima in population and job opportunities. In 1909, only the Surveyor General Hotel survived to attend to the travelers.

This change of circumstances has helped to preserve this place as frozen in time. The structure of the village is still preserved with its main streets and buildings such as the Post Office of 1887, the Berrima Public School of 1869, and the mills to supply water to the prison and buildings. Many of the old buildings are preserved around Market Place, a large park divided by the highway to the south of the city.

### Railroads for the City

NSW's rail network is linked to Sydney's suburban network, which includes the underground urban subway. Above and beyond its origin, history, technical characteristics or management system, the network and its operation are a direct product of the power of the city, its role in the territory and the very configuration of the urban nucleus. The destinations, the routes or the situation of the stations themselves assume a key role in the formation of the city, without any of the typical conflicts that usually arise in great cities.

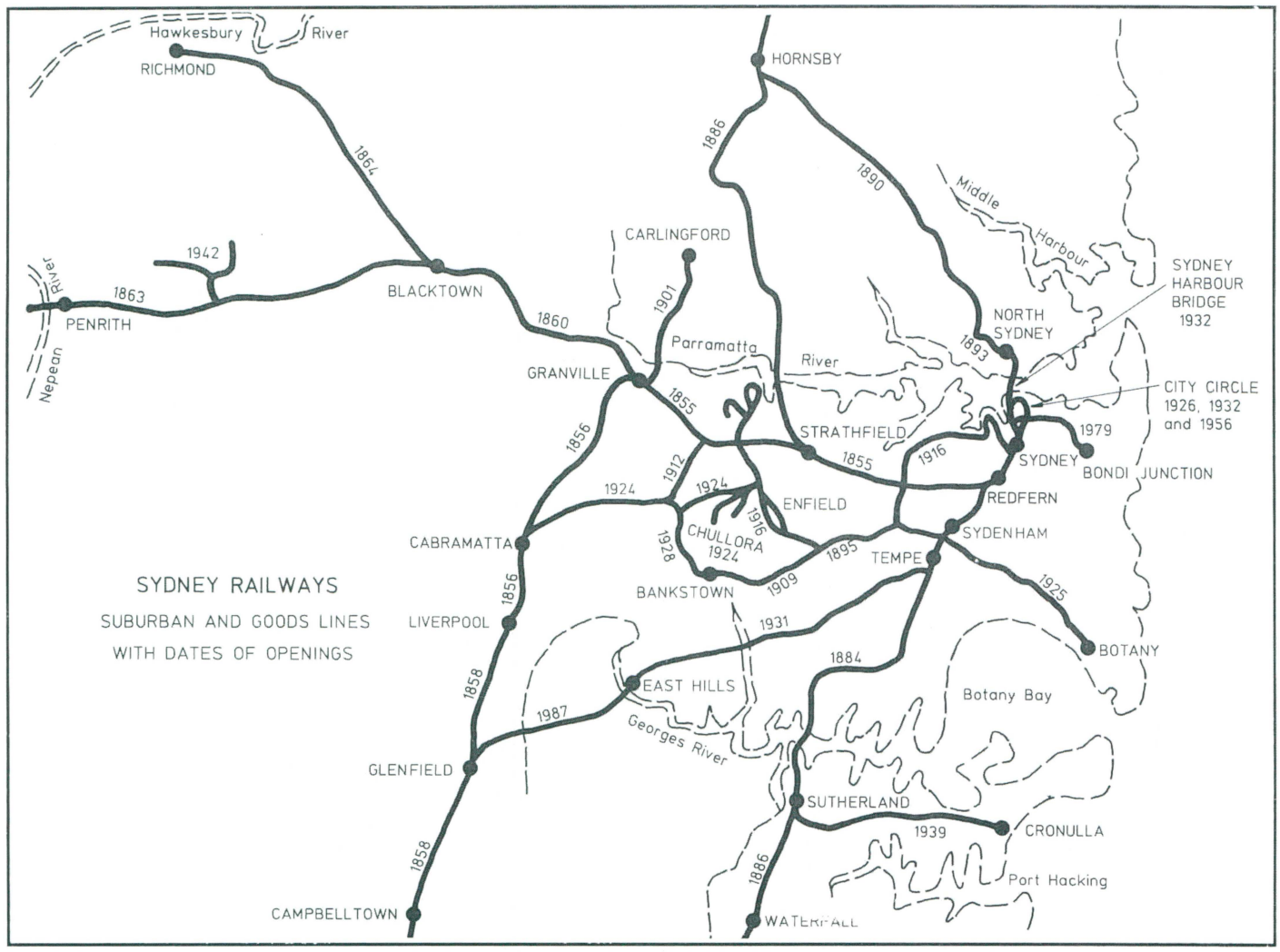
In New York, for example, the idea of the great George Washington suspension bridge arose to solve the railroad crossing over the Hudson River. But the lack of agreement on its location by the existing private companies motivated its transfer several kilometers upstream of the river and its exclusive dedication to cars. From that derived the hegemony of the automobile in the metropolitan region, soon extended to the whole country [2:261].

### Privileges of a Young City

This intimate communion was facilitated by the short period of time between the founding of the city and the emergence of the railways: Sydney began to function as a city at the time of the construction of the first railways in England. The city's growth options ran parallel to the technological progress and the new possibilities of the railroad, so that the margin of error was minimal.








Parramatta Railway Station, 1860

Railroad networks with construction dates for each section [23:70]

Tackeray Bridge over
Parramatta River





Ryde Bridge over
Parramatta River




Sydney Bridges

1.Sydney Harbour Bridge
2.Pyrmont Bridge
3.Anzac Bridge
4.Iron Cove Bridge
5.Gladsville
6.Meadowbank Railway
7.Gasworks Bridge

## Bridges for a Difficult Landscape

To continue with the same example, the coexistence of trains and pedestrians in the streets of New York was the cause of many accidents, often resulting in casualties; and the smoke from the locomotives in the tunnels became a serious health problem. In Sydney, electrification was —practically— the first option seriously considered.

The mere observation of Sydney Harbor from any point of view produces beautiful landscapes, but also reveals the great number of obstacles to the tracing of communication routes to unite its multiple sites. The countless coves of a coastline endowed with geometrical qualities close to the fractal, impose strong obligations on the configuration of the network. Likewise, the inclination of its slopes facilitates the observation and offers coveted lookouts for possible residences, but also generates the need for frequent tunnels or bridges to maintain reasonable routes.

## Road and Railroad Bridges

Near the city, the coves and their tributary rivers or streams produce many obligated crossings wherever urban growth is directed. This is the case of Darling Harbor, Blackwattle Bay, Iron Cove, the Parramatta and Lane Cove Rivers, and Middle Harbor. But on a larger scale, many of the points used as piers for crossing the bay with ferries are clear targets for generating direct physical links between those places with viaducts or tunnels. Don Fraser lists several of them, such as: Spit at Middle Harbor, Dawes Point at McMahons Point at Sydney Harbor, Uhrs Point at Rhodes on Parramatta River, Tom Ugly Point and Taren Point at Georges River, and Peats Ferry at Hawkesbury River [24:100].





John Whitton Bridge in Rhodes over Parramatta River

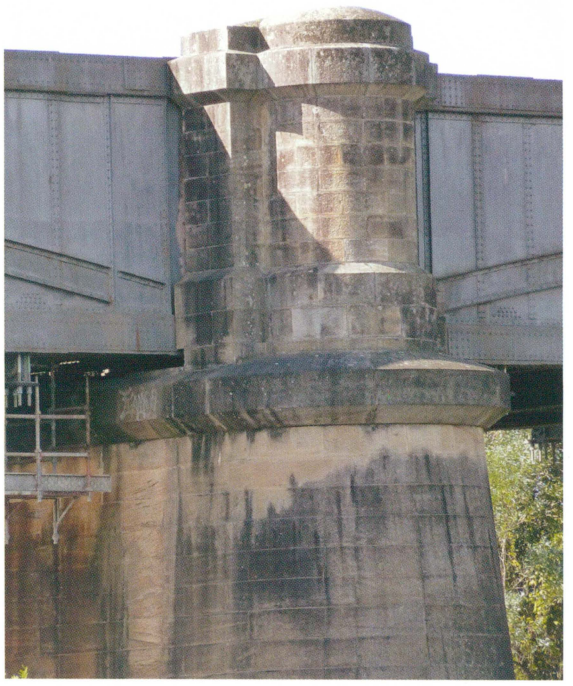
## Menangle Bridge over Nepean River, 1863

To this must be added the road bridges over the railway and other artificial obstacles, foreign to the port and its rivers. Until well into the century, the colony could only allow level crossings and ferries, but the strong growth of the city and the foreseeable needs of commerce and industry forced the provision of the means to build a great number of bridges.

The most urgent were those necessary to complete the national railway tracks, to the south and west. The optimal types according to the span depended on the materials available at any given time and place, always on the basis of wood and stone, plus the direct importation from England of the prefabricated sections of iron when the spans exceeded a certain threshold. Chief Civil Engineer John Witton was in charge of railway bridges, while Chief Engineer W C Bennet oversaw the road bridges.

The crossing of the Nepean River, in Menangle by the south lines in 1863 and in Penrith by the west lines in 1867, was one of the first problems to be solved. Both bridges served simultaneously the railroad and the highway, and necessitated multiple spans, of 50 and 56 m (164 and 184 ft) required by the flood discharges. Both were solved with box girders, made of wrought-iron riveted sheets, about 4 m (13 ft) edgeways, inspired by the recent success of Robert Stephenson's Britannia Bridge in Great Britain, completed in 1850. The design adds a highlight in the web of the girders, in the form of a spread arch between the support points and tangent







Menangle Railway Bridge, 1863

to the upper chord. It was overseen by British engineer John Fowler and the beams were built in a Liverpool workshop.

When the Upper Nepean Scheme dams were built for the supply of Sydney, the Menangle Bridge was fitted with an intermediate pier to reduce its span. Starting in 1907, new bridges for double-track railroad traffic were built alongside the previous bridges over the Nepean, and the old bridges remained in use just for the road traffic, now two-way.

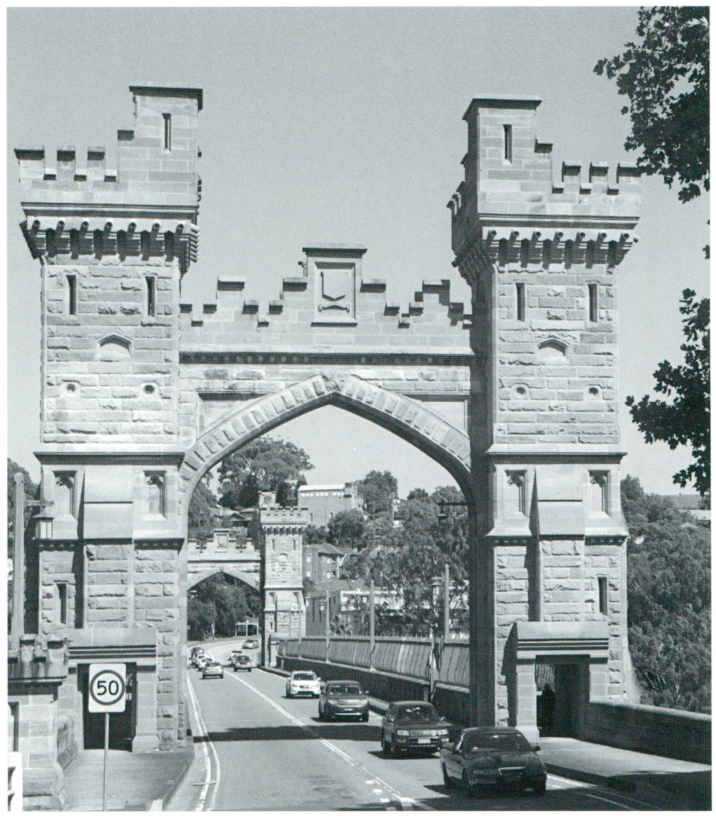
For the railroad and highway crossing over Sydney Harbor, both designers chose the same type of beam in heavy iron latticework, used in some still-standing bridges, such as the Meadowbank Bridge of 1886 over the Parramatta river and the Como Bridge of 1885 over the Georges River. Of those, only the Gasworks Bridge on the Parramatta River, built in 1885, remains in operation [24:104].

**James Waller Roberts CE**

The principal responsible for the construction of bridges in NSW was James Waller Roberts. Born in 1871 in Maryborough, Queensland, he became a brilliant student, and graduated in engineering with honors at the University of Sydney. He joined the Public Works Department-Railway Construction Branch, where he soon specialized in bridges. This engineering unit was later transferred to the Railway Department in 1917 to create the Way and Works Branch. Roberts was promoted to Principal Designing Engineer in 1920, a position he held until his retirement in 1933.



The Spit Twin-Bascule Bridge in Sandy Bay, 1924



Northbridge, 1894, 1937

Prominent works of his career include the steel lattice arch of the main lobby of Sydney Central Station, all the railroad bridges of the North Coast Railway and a double-deck drawbridge built in 1932 on the Clarence River in Grafton. At the age of 39 he wrote a definitive and influential article on railway bridge engineering in NSW [24:5].

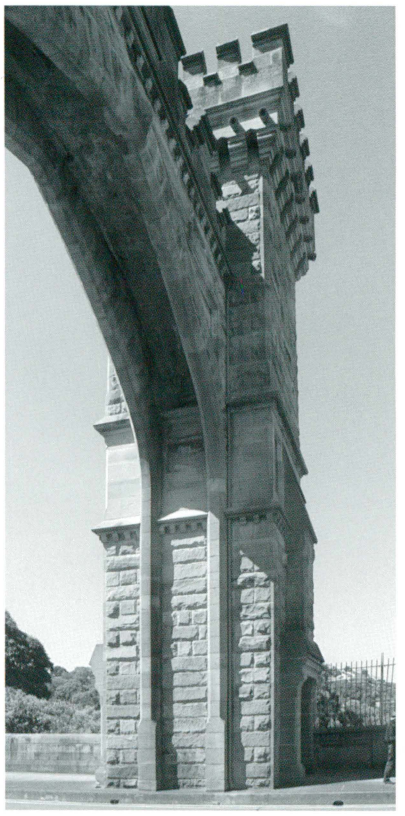
## Railroad Bridges

This article began with a brief reference to British bridges, moving on to discuss the railroad bridge over the Hawkesbury River (1889), designed and manufactured in the United States and the first bridge of American influence. From this point onward, we find departmental designs of Pratt-type trusses using imported steel. In the current designs, the best features of the previous examples and the modifications made to the joints have been preserved, returning to riveted joints instead of nailed joints.

Next, he refers to the long-term duplication of the simple railroad of the North Coast and its effect on the bridges. He estimated a 75% increase in the cost of the line over that of the initial bridges due to the double track, whose capacity would exceed the needs of the traffic for many years. However, he was aware of the future when he said: *improvements are constantly being made in designs, workshop practices and methods of erection. These advances may be available when the fitting times come.*

Almost a century later we can identify developments such as steel welding, prestressed concrete, box girders, the use of high-powered mobile cranes and the gradual start-up as a justification of his stance. There are a large number of sites in NSW where the old bridges and the adjacent newer ones show the changes in technology.





Northbridge Suspension Bridge, c. 1910. Photographic album, prints of outdoor views, owned by Emily C Marsh. Royal Australian Historical Society Collection. Courtesy of Powerhouse Museum, P.237/21-45

Northbridge, 1894, 1937

As expected from an eminent bridge engineer at the time, his article contains a long technical discussion on bridge types and sizes for use in a variety of sites. After consolidating all the data, he made the rational decision to use three sizes of Pratt steel trusses, of 61 m, 48 m and 36.6 m span, for the main crossings of rivers; solid girders of 20 m for sections smaller than 30 m; and transom-topped timber openings (TTTOs) of 8 m for smaller watercourses and access vents to the viaducts [24:5].

## Movable Bridges in the Bay

Movable bridges were a prerequisite for the crossing of the Sydney Harbor waterways, and four types were used: tilting, swiveling, sliding and drawbar. As possible examples, in addition to the above-cited Pyrmont Bridge, of the rotating type, mention should be made of the bascule bridge over Shea's Creek in Mascot, 1895; the rotating bridge over Cooks River, Mascot, circa l900; the rotating bridge at Glebe Island, 1862; the swing bridge in Blackwattle Bay of the l860s; and the Spit double-deck bridge, from 1924. A drawbridge was built in Ryde over the Parramatta River in 1935 [23:108].

## Northbridge, 1894 and 1937

Usually, the bridge responds to the need to overcome an obstacle. That obstacle or difficulty generates a social demand for passage over the river or ravine. But it also works the other way round: even if there is no obvious need to cross a river, if a bridge is built, the customs of the inhabitants of the riverbanks will change and people will begin to use it.

The Northbridge Suspension Bridge of 1894 was specifically built to develop the residential area on the north side of Long Bay, making it more easily accessible. The





Iron Cove Bridge, 1888

bridge appeared in posters and pamphlets as an entrance gate to new residences for sale. But in the 1930s, the cables began to show signs of corrosion and a new 103 m (338 ft) concrete arch, of ugly appearance, was constructed in 1937. The piers of the suspension bridge were used as support, in the form of crenellated towers, which now protrude above the deck without fulfilling any function.

On a plaque on the bridge you can read:

> *Suspension bridge at Northbridge*
>
> *Designed by J. E. F. Coyle and Prof. W. H. Warren for the North Sydney Investment and Tramway Co., the original bridge was intended to promote residential development. After its completion in January 1892, builder Alexander Johnston collected tolls when the company became bankrupt. Acquired by the State Government in 1912, the bridge carried trams from 1914 until 1936.*

## Iron Cove Bridge, 1888

Iron Cove is a shallow estuary used by the Aborigines of old to fish and collect oysters, clams and other mollusks from the rocks and the bed of its waters. The first European settlers also used the seafood of Iron Cove, but they exhausted all its natural resources in a short time. Lumberjacks drifted stealthily up and down the forest to gather firewood and timber for construction, or they collected forage for their cattle in the pastures of the area without permission.







Meadowbank Rail Bridge, 1885

The most destructive ones were those who plundered for decades the abundant shell deposits of Iron Cove, a valuable raw material for the manufacturing of lime, the only way to make mortar in the young colony. In 1841, the police began to act, requisitioning illegal boats from shell collectors discovered on the shores of the bay.

In 1888, the Iron Cove Bridge was built with a thick lattice of iron to access from Balmain and to better guard the island. Before its demolition in 1955, an entrepreneur bought the spans to make smaller bridges elsewhere. The bridge was then replaced by a steel bridge, which was subsequently doubled in 2011.

The consolidation of the first metallic lattice bridges in the construction of the rail networks facilitated their rapid adoption in Sydney for crossings over the multiple waterways of the bay. Few of these have survived, since the new types of lattice girders were more efficient than the first thick lattices. The Meadowbank Rail Bridge on the Parramatta River, built in 1885, is one of them, although it is currently out of use.

In the same year of 1885, another railroad bridge was built in Como, on the Georges River, which has been reconverted into a footbridge for pedestrians and cyclists. The former Gladesville lattice rail bridge was demolished in 1965, but the same Iron Cove Bridge entrepreneur bought it to distribute its multiple spans among smaller bridges.

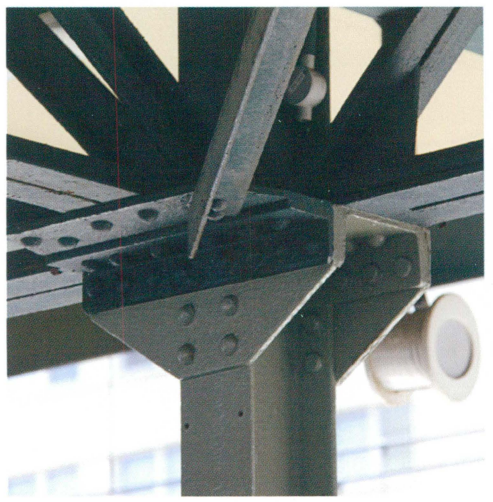
**Meadowbank Rail Bridge, 1885**














## Central Station, 1855, 1908

The construction of the central station of the railway network began in 1901 during a period of economic, cultural and national optimism of Australia. The first section was inaugurated in 1906 and the clock tower was added in 1921. It was built to replace Redfern Terminus in a place closer to the center of the city.

In 1924, *Central Station was still the gateway to the city: neither the underground railway not the Harbour Bridge had been built...* and the city begins *in the spacious light filled concourse with its curved glass and iron roof. Central Station was a major intervention of unprecedented scale in which modern technology heralded an explosion of people and goods from the suburbs and the countryside to the city, concentrating the city at the head of the burgeoning railway system* [41:296].

In a similar Federation Free style and the same reddish sandstone than the other significant buildings of the city, the main building of the Central Station stands out over all of them due to the determined will of its promoters and designers to emphasize the importance of the railway for Sydney and the State of NSW. In a dominant position over its surroundings, accentuated by majestic access ramps and a tower 85.6 m high with a large clock on each of its four faces, the largest intervention in urban history was consciously designed to provide and improve the views to and from the main building.

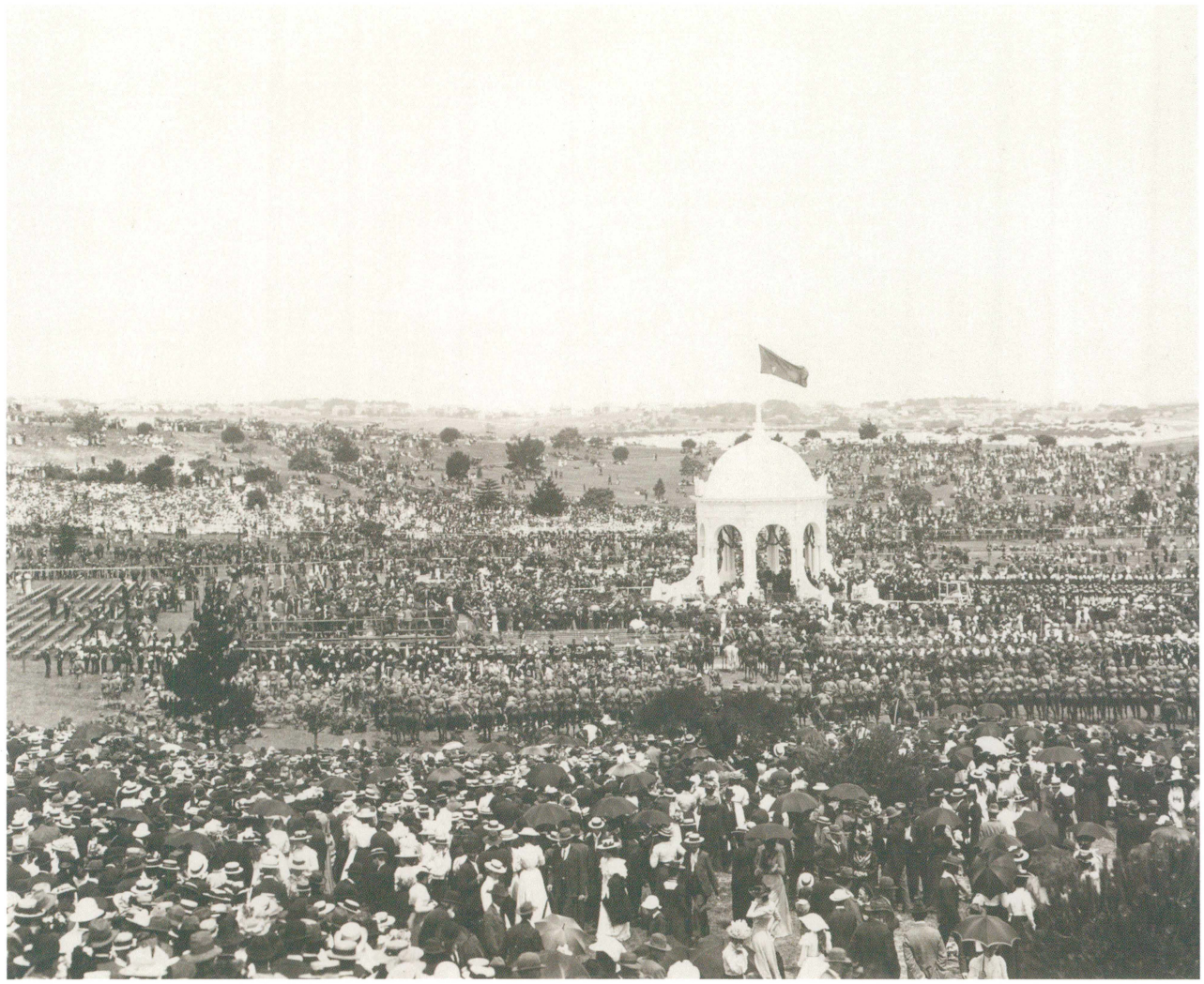
This high position is used functionally to access by road and ramps at various levels, allowing an extensive underground luggage network and separating different modes of transport. The layout of a large square —Railway Square— continuing in a park —Belmore Park— in front of the building generates a large open space dominated by the main façade with its tall tower in a corner. A series of carefully designed bridges, a large track park, a power station, the tunnel openings of all the subway and rail lines and the later Light Rail tracks are located nearby. The building and its ways of access constitute a Public Work greatly integrated into the city.

The most notable architects and engineers of the nineteenth and twentieth centuries participated in the station, including: James Wallace and William Randle, builders of the first railway from Sydney to Parramatta and the associated Darling Harbor Branch Line; the last Colonial Architect, James Barnet (for the mortuary station); the first Government Architect in NSW, Walter Liberty Vernon (main building and the post office); and the chief engineer of the Metro and Harbor Bridge, J J C Bradfield (power station).[25]

## Centennial Park, 1888

In the center of the city is Centennial Park, an extension of 189 ha of marshes, rocks and scrub, transformed in 1888 by Sir Henry Parkes into a large park to commemorate the centenary of the arrival of the Europeans to Australia. It followed the design of traditional Victorian gardens with grand avenues, ponds, grasslands with sports fields, historic buildings and statues. In 1901, the opening of the Australian Federation was held there, becoming a great focus of attention and gaining popularity.

It is accessed via Paddington Gates, through Paperbark Grove, a large avenue of melaleucas.[26] Of note are the Rose & Column Garden with two statues on Corinthian columns, surrounded by a rose garden; the Federation Pavilion, with a circular ground plan, designed by Alexander Tzannes; the Ranger's Cottage designed by Walter Liberty Vernon; and a labyrinth based on medieval designs from the Chartres Cathedral. There are a large number of early twentieth-century trees, a numerous colony of large bats, more than 140 species of native birds and ponds with eels that travel to New Caledonia to breed.



Swearing in ceremony, Centennial Park, Sydney, Commonwealth Celebrations, 1901. Courtesy of National Library of Australia, nla.obj-140803718






















Centennial Park

1. Moore Park Golf House
2. Moore Park Toll House
3. Federation Place
4. Robertson Rd Sports Fields
5. Comrie Memorial Fountain
6. Ranger's Residence
7. Busby Pond
8. Paperbark Grove
9. Frog Hollow Bridge
10. Frog Hollow
11. Rose Garden
12. Column Garden
13. Paddington Gates
14. Superintendent's Residence
15. Griffins
16. Sir Henry Parkes Statue
17. Centennial Parklands Dining
18. Lachlan Reserve
19. Lily Pond Bridge
20. Lachlan Swamp
21. The Wetlands Interpretive Maze
22. Sandstone Ridge
23. Parade Grounds
24. Pine Grove
25. Charles Dickens Statue
26. The Labyrinth
27. Federation Pavilion
28. Willow Pond



















13


14


15


16


17


18


19


20


21


22


23-24


25


26


27


28



## The Polluted Stream

**The Water of Lachlan Swamps**

Also the water supply was insufficient and it was necessary to search for water further, in Lachlan Swamps. This place had water in abundance, being a basin of streams, marshes, springs and lagoons fed by underground flows. In 1811, Governor Lachlan Macquarie designated this area as the second Sydney Common, after Hyde Park, and it was used for grazing, logging and burning. Starting in 1827, water was extracted to supply the city from the present area of Busby's Pond, through the underground conduction of Busby's Bore, to Hyde Park. The system was in operation until the start up in 1858 of the Botany Swamps Water Supply Scheme, also described in the previous chapter.

Located east of the city, less than 5 km from the financial center and just minutes from the east beaches, it is one of the largest and most visited free spaces in Sydney. This extension of more than 360 ha comprises three of the most important parks in the city. To the west lies Moore Park, inaugurated in 1869 with 115 ha of athletic fields and the great Moore Park Golf. To the east is the Queens Park of 26 ha, opened in 1888 and situated in a natural amphitheater at the foot of sandstone cliffs, with panoramic views and historic trees.[28]

**Edward Orpen Moriarty, Engineer-in-Chief**

The head of water supply to Sydney was Edward Orpen Moriarty (1824-1896), Chief Engineer-in-Chief for Habours and River Navigation from 1858 to 1888. Born in Ireland, Moriarty was educated at Trinity College, Dublin, where he graduated with a BA and MA. He was elected member of the Institution of Civil Engineers in 1865. He worked as an apprentice in the construction of a dam on the island of Portland, then in the design and construction of steamships and railways. During that period he passed the prescribed examination for County Surveyor on the Board of Works.

In 1848 he arrived in Sydney, where his family had settled in 1843. His father was Port Master in NSW and Harbor Master in Sydney, and his brother worked in the Lands Department. As he initially did not find employment in his profession, Moriarty accepted a position as assistant surveyor in the Lands Department and worked for some time in geodesic surveys. In 1852, he established himself as a Civil Engineer in Sydney, where he supervised the construction of Hunt's Creek Dam (Lake Parramatta), timber bridges over the Murrumbidgee River at Wagga and the Nepean River at Richmond, as well as the opening of coal mines in Wollongong.

The main work of Moriarty in the years 1855-1858 was the development of a plan to control the estuary of the Hunter River, extending the dykes and channels of the river with jetties and stone breakwaters, thus shaping the current port. In January of 1858, Moriarty moved his office to Hunter Street, where he commissioned more offers for the acquisition of machines and barges for the new dredging of the Hunter and for the construction of a new dock in Newcastle.

After that, Moriarty became the obvious choice to run the Harbors and Rivers Navigation Branch, later Coastal and Rivers, the high-level civil engineering branch of the Public Works Department. He was its first Chief Engineer since its creation in 1885, with a staff of five people and an expenditure of less than £ 13,000. He remained in the post until his retirement in 1888, when the staff had grown to 107 people and the expenditure to £ 436,000 pounds.

The Harbors and Rivers Branch began work on the first water supply studies for Sydney, Newcastle and Maitland in 1878, and for rural villages in 1879. Moriarty also became responsible for the design and construction of Sydney's water supply and undertook his most important project, the Upper Nepean Scheme, to ensure an adequate supply to the city. 29 The list of works designed or built by Edward Moriarty during his position as chief engineer is the best expression of his work and dedication.[30]

## Upper Nepean Scheme 1880

In the mid-1860s the Botany system began to be viewed as unsuitable for the future metropolis of Sydney. The most affordable resources were on the Nepean River, but their possible exploitation went beyond the funds available to the Colony. In 1867, the NSW government created a Commission to examine other water sources, as well as the possibility of improving the existing Botany system. The Commission was chaired by Professor John Smith of the University of Sydney, and it included among its members Edwin Orpen Moriarty, then Civil Engineer of the NSW Department of Public Works.

During two years of research, under the direction of Moriarty, a detailed examination of water resources available for the supply of Sydney was carried out. Engineer Bell, from the City Council, proposed a massive expansion of the Botany Swamps regime through increased storage capacity and additional pumping, and the Commission recommended a certain expansion of Botany's supply, but its viability and prospects as an important source of resources were limited.

## Hydraulic and Financial Resources

The Commission investigated numerous schemes with possible supplies from the Georges River, Picton Lakes, the Lower Nepean, and the Upper Nepean with its main tributaries, the Cataract, Cordeaux and Avon rivers. The latter scheme, devised by Moriarty, was approved to divert to Sydney the flow of the four rivers, at the top of the sandstone plateau towards the interior of the escarpment of Illawarra, through the Upper Canal with a total of 24 km of tunnels, 53 km of canals, 1 km of 9 aqueducts and 27 km of pipes.

In principle, the scheme was similar to those used in other large cities in the western world, but the size and engineering effort required to build it in a colony less than a hundred years old made it an outstanding proposition. The scheme won over the population, promising an almost unlimited supply of clean water, way beyond the dreams of the users of Busby's Bore and the Botany system, increasingly contaminated by the urban and industrial development of the basin [23:21].

However, financing the scheme was a different matter, and it was necessary to use the results and recommendations of another Commission of the Special Health Council of 1875 to move the Parliament to approve the construction of the Upper Nepean Scheme for the supply and sanitation of metropolitan Sydney. In 1879 and 1880, the necessary laws were passed to authorize the construction of Sydney's water supply and the sewers and outlying sewers of the North (Bondi) and the South (Botany).

## Professional Design and Management

A Supplementary Act was also approved to create an independent water and sewerage supply board, dedicated to controlling and maintaining these works after their design and construction by the Public Works Department. With the institution

of these large systems of water supply and sewerage designed by civil engineers and subject only to the limitations of the funds available to the Government, began a new era of civil engineering activity, previously dominated by the railways.

The Upper Nepean Scheme, as it was built, carried water from the Cataract River at Broughtons Pass to the Crown Street reservoir, at a distance of 104 km. The work was carried out by contract, under the supervision of section engineers responsible to the resident engineer under the orders of E. O. Moriarty [23:22].

### Rushed by the Draught

However, in early 1885 and before completion of the scheme, a severe drought affected the Sydney area and concern regarding failures in the supply of Botany emerged. The wrought iron aqueducts of the Upper Canal, Prospect Dam, the 183 cm pipe from Pipe Head in Guildford to Potts Hill, and the 100/120 cm main pipeline from Potts Hill to the Crown Street reservoir were all unfinished. The deadline for completion was excessive, and restrictions on consumption seemed inevitable.

This led to a hectic climate of restlessness, soon overcome thanks to the modified plan proposed by the Hudson Brothers company (later Clyde Engineering). The rescue plan included: (a) replacement of inverted siphons of foundry pipes by aqueducts, (b) placement of a pipeline under the Prospect Reservoir, (c) construction of an iron aqueduct to Campbell's Hill, (d) another pipeline from there to Potts Hill, and (e) piping along Cooks River valley to the Botany pumping tank and from there to the Crown Street reservoir using the existing system. It was a tortuous route but very effective and easy to build: works began in July of 1885 and the water arrived in January of 1886 [23:23].

### Prospect Dam & Reservoir, 1888

The Prospect Reservoir plays a central role in Sydney's water system, as all flows from the different reservoir groups converge in it to be conducted to the city. With the reservoirs of Cataract, Cordeaux, Avon and Nepean, built between 1907 and 1935, the Upper Nepean Scheme delivers the water to the Prospect Reservoir through the Upper Canal. In addition, part of the water of the Warragamba reservoir (1959) also discharges in Prospect Reservoir by means of a great conduction, and the most recent Shoalhaven scheme is also connected to this reservoir.

Originally, water was distributed from there by gravity, although now several pumping stations are used to reach the extensive suburbs of the entire area. At the peak of its supply, more than 80% of the water delivered to the city passed through Prospect, although from the late 1990s the building of a bypass to improve its operability and to lead cleaner water directly to treatment plants was under consideration.

### The Earthfill Dam

The body of the Prospect dam was built in the 1880s with loose materials, a type of dam little developed in Europe but very common in the United States, where more than 70 loose material dams had been constructed before 1850, and more than 400 by the end of the century. Prospect dam had a maximum height on foundations of 26 m, increased to 26.5 m in 1898, not insignificant at the global level since the first dam whose height was over 30 m was that of San Andreas, built in 1870 directly on the famous San Andreas Fault, for the supply of the city of San Francisco [1:184].





Prospect Reservoir, earthfill dam

Prospect Reservoir, inlet tower





Prospect Reservoir, gardens

Prospect Reservoir, scour outlet

Prospect Dam was designed as an earthfill zoned dam, with a core of impermeable clay in the center, introduced about 9 m below the foundation and 9 m wide at the base, decreasing to about 3 m near the crown. On both sides of the core were placed two transition zones of about 8 m width of clay of the compacted zone, covered with earth, originally in slopes of 3:1, later extended to 6:1, with berms to correct problems of instability [37].

## Landscape and Capacity of the Dam

Until the scheme's entry into service in the 1910s, Prospect Reservoir was the only regulated water reserve in the city. But its hydraulic basin was twice the surface of the reservoir and, in practice, its supply depended almost exclusively on the flow of the rivers.

With 26.5 m of dam height, a reservoir of about 50 $hm^3$ (cubic hectometres = million cubic meters) capacity and 500 ha surface, located about 30 m west of Sydney, was achieved. With a 2,225 m crown and new slopes, the dam occupies a large area and is seen as a gently rolling green landscape, when one approaches it from the Great Western Highway about 12 km from Parramatta, along a path lined with trees.

## Buildings and Gardens

The soft slopes downstream of the dam are planted with grass, with some trees dotting the scene. Near the left abutment is the inlet tower and a bit below is the valve chamber, with an oval drain pond that extends into a channel. The entrance is landscaped like a park, with a highly selected vegetation and a careful design of roads, benches, and outlook points.

The valve chamber is a small elongated octagonal building with a floorplan of about 10 x 8 m, built with brick walls on a carved sandstone base. The frames of windows and door are also sandstone and the building is topped by a cornice and small crenels painted in white. Although perhaps rather excessively finished, the whole building with its gardens and the adjacent curved pond with stone walls and copestones has a quaint, picturesque feel, somewhat arbitrarily described as colonial.

Basically, the whole facility attached to Prospect Dam has a very similar feel to that of the large installations of the Canal de Isabel II in Madrid, or the Croton Aqueduct in New York, typical of these small buildings attached to the dams and pipelines of large water supply systems designed and built by Civil Engineers. Perhaps one should speak of a 'universal' style subsidiary to the great works of supply and sanitation, of a quaint byproduct of supposed local feel but of 'globally' employed floorplant, dimensions, materials and style.

## Similar Water Supply Systems in the World

This is not surprising at all, for the major Civil Engineering journals, such as Engineering News Record (before 1874 Engineer & Surveyor) in the United States, the Revista de Obras Públicas since 1853 in Spain, or the Journal du Génie Civil in France, provided a faithful image of all works built anywhere in the world and were used as work materials by all civil engineers. In the second half of the nineteenth century, the transfer of technological contents was assured by the widespread subscription to these publications by all those who practiced these disciplines.

## Canals and Heritage

Downstream of the dam begins the Lower Canal, 7.7 km long and 77 cm high, which connects in Guilford with the city's supply network. One of its most important structures was the Boothtown Aqueduct (1890), to overcome a smooth valley, with 22 brick arches and a total of 220 m in length. In 1987 the aqueduct was replaced, after suffering several structural problems, by an inverted concrete siphon of 3 m width, built on a land embankment next to the aqueduct. In the 1990s, the Lower Canal was replaced by a pipeline and the corridor reserved for the canal opened to the public in 2003 as a bicycle trail.[31]

Despite the changes, the dam, the valve chamber and the Lower Canal were declared elements of historic interest in 1994 by the Institution of Engineers of Australia [37].

## Pollution of the Bay

The polluted water of the Tank Stream, which had rendered it useless as a resource for supply, continued to pour into the bay, and waste discharge points multiplied with the growth of the city. In 1866, the *Commission on the Condition of the Harbor of Port Jackson* was created, collecting testimonies about the state of water in various parts of the bay. The main waste discharge sites at Woolloomooloo Bay, Bennelong Point, Tank Stream, Darling Harbor and Blackwattle Swamp drained huge amounts of rubbish, sand and silt collected on the city streets.

At Darling Harbor, clogging was growing at a rate of one meter in three years, and the banks were advancing due to industrial ash and inert materials discharges. At Bennelong, the feces and trawls from the streets joined the old discharges of the Tank Stream, increasing the silting and producing floating residues that dispersed throughout Sydney Cove and its surrounding coves. The issue was old, but the city

did not have sufficient resources to deal with the pollution process and the situation deteriorated rapidly. In the more industrial west zone, waste was dangerous and even toxic.

### Waste and Sharks

The abattoir opened on Glebe Island in 1860 further complicated things. Its distance from the population was enough to dissipate odors, but blood and waste increased with the unstoppable growth of meat consumption, which multiplied by eight in the next 30 years. The impact on the water was greatest to the west of the bay, where the water often appeared dyed red, but it spread throughout the bay depending on the floods of the Parramatta River and the currents, sometimes carrying the odors as far as Manly [35:181].

One of its effects was the growth of the already prolific population of sharks, soon attributed to the slaughterhouse when remains of cattle were found in the viscera of some catches. The fishing of other species, however, diminished: some disappeared and others stopped being used for food because their meat tasted and smelled bad.

A new commission of 1888 on fishing discovered that many species had migrated, because the discharge of slags and ashes of the steamships had ruined the seabeds. In its conclusions, it stated that local fishing had been devastated and had ceased to be a source of supply to the city [35:190].

### Need for Sanitation

The need to build an adequate sanitation system for the city was evidenced at the same time as the proposed supply of the Upper Nepean Scheme by the *Special Board of Health* created in 1875. The aim was to avoid dumping into the bay, but that required collectors of great length at a sufficient depth, equipped with pumping systems to propel them to the coast. A few years later, the construction of two large emissaries, denominated Northern and Southern Ocean Outfall Sewers, with discharge in Bondi and Botany Bay respectively, together with a control body on supply and sanitation, the *Board of Water Supply and Sewerage,* which began to operate in 1888, were approved. At first, this organism was exclusively dedicated to the control of the project and the execution of the works, that would be realized directly by the *Public Works Department,* but starting in 1924 it assumed all responsibilities [60:23].

But the construction of the collectors necessary to go under the heights of Darlinghurst, Paddington, Woollahra and Bellevue Hill needed techniques not yet available in late nineteenth-century colonial Sydney. Four wells were drilled to provide access to the main tunnel, with planned dimensions of 2 x 2 m section under Liverpool St, increasing to 2.5 x 2.5 m at Bondi, but the excavation progressed very slowly [23:34].

### Cooks River Sewage Aqueduct, 1895

The extension of the main collectors to the industrial areas of Glebe, Newtown and Balmain, west of Sydney, began in the 1890s with more tunnels. This expansion required the construction of two large reinforced concrete aqueducts over Johnston's Creek and White's Creek in Annandale. The conventional design would have required huge brick structures with arches to support the pipes, but a new generation of engineers from the Public Works Department, in particular W. Balzer, were aware of new developments in Europe and prepared a cheaper alternative design, using reinforced concrete arches of the Monier system. The design was so innovative that







Cooks River Sewage Aqueduct, 1895

the contractor was required to include maintenance and repair for three years after its construction in 1896.

The extension of sanitation to the west zone also required the construction of two long aqueducts over the Cooks River and Wolli Creek, with a tunnel between them, here resolved with low-span recessed brick arches that support the alignments of foundry pipes of the collectors. The drum is lined with colored ceramic bricks, slightly protruding, whose design and highlights emphasize the shape of the arches and achieve a well-finished elevation [23:36].

## The Outburst of the Plague, 1900

In 1900, the health situation worsened seriously with a large outbreak of bubonic plague, which generated great fear in the population. In response, the government established a quarantined zone with barricades along Kent and Charlotte Streets, considered a breeding ground for the disease. Guards restricted the movement of people in and out of the area of Darling Harbor, Millers Point, and The Rocks, while plague-carrying fleas moved freely across the barriers. The crisis prompted the government to announce the renovation of the area and the conversion of private land into public, to dedicate those areas to large-scale urban projects, to be carried out by a number of public bodies [60:48].



## Parramatta Dam, 1856

Although at a more local level, because it was not connected to Sydney's supply system, Parramatta dam was a new source of pride for the world of construction and for the country, due to global technological reasons and to its relevance for local development. Built in 1856, it was Australia's first arched dam and the eleventh in the world, occupying a prominent position worldwide in the evolution of the type of dome vault dams on account of the relative slenderness of its factory. Relevant civil engineers of the time, such as Captain Percy Simpson, in principle its designer and first person in charge, Edward Orpen Moriarty as supervisor of the work and William Randle (sometimes named Randall), as constructor were involved in its design and construction. Its later heightening was designed and directed by C. W. Darley, a reputed designer with more than 13 arched dams built between 1898 and 1908.

The town center of Parramatta had been supplied by its river from the foundation of the colony, first with a well constructed in 1815 and later with two small dams commissioned by Governor Macquarie in 1818.

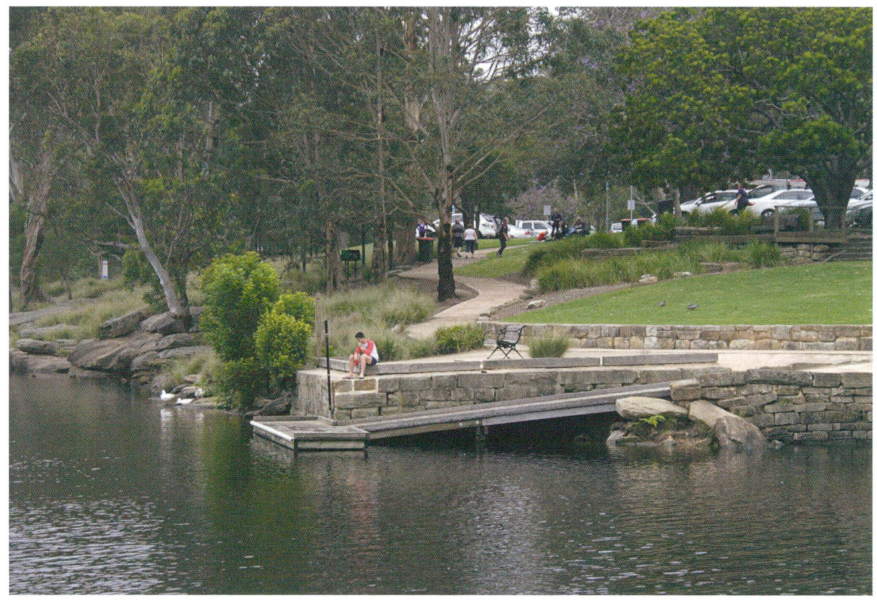
The first, called Town Pond, was located near the Lennox Bridge and forms the still visible widening of the Parramatta River. The second was built near the current Cumberland Hospital in 1831. But the population grew, intensifying scarcity and water pollution. By mid-century, the debate over where to build a new supply system became widespread, and eventually Hunts Creek was chosen. After a failed adjudication and a new public debate about its location, the construction of the dam was back on track with the appointment of Captain Simpson and the selection of Randle as contractor in 1853.

The vertical face of the finally built Parramatta Dam of 1856 is a cylinder of 73 ms radius and 12.5 m height, with minimum measures of 4.5 m thickness in the base and 2.4 m thickness in the crown, unusual in a pioneering work. The original spillway was placed on the rocky massif to the north side of the dam, then moved to the central position above the body of dam when it was heightened by 3.3 m in 1898. It was built in sandstone rows 0.6 m high with abutments penetrating about 4 m on both slopes. Roman cement was used for the areas in contact with water, and normal Portland cement for the rest, both imported from England.[32]

During the next 25 years, the dam was used to fill the Town Dam and as a public pool for the people, constituting the first core of the current recreational area. It took Parramatta nearly 30 years to get the funds to build some filters, the pump, and the city's sewerage and distribution network. By the mid-1890s, the population had risen to 13,000 people and the distribution network entered into service, demanding a capacity increase, achieved with the aforementioned heightening of the dam. In 1909, Parramatta's supply was connected to Sydney's general system and the dam and its reservoir were definitively established as Hunts Creek water reserve, later transformed into a recreational area and now called the Lake Parramatta Reserve.











## Paddington Reservoir Gardens, 1866, 2009

It is not frequent to find the rehabilitation of an underground water reservoir intended as open public park. However, the project to rehabilitate the Paddington reservoir focused precisely on the perspective of the cultural landscape, attending not only to its original function but to the different vicissitudes of its becoming. At one point in its history, the deposit was used as a garage and suffered the collapse of much of its roof.

In 2003 the City of Sydney acquired the warehouse and the park, and a year later an action plan for the site was approved. In 2006 Tanner and Associates prepared a Conservation Plan. The structure was in danger of collapse, with much of the west chamber of the warehouse in a state of ruin. In 2009, once completely transformed into Paddington Reservoir Gardens, a new public space of free use was inaugurated.

The gardens result from an integrated and collaborative design process between the landscape architect JMD Design and the Tonkin-Zulaikha-Greer architects on the part of the City of Sydney. This team did not want to do another grass lawn, but to explore the possibility of working with the ruins.

According to their own story, the client wanted to restore the entire structure and establish a public park on top of it, but they saw the opportunity to create a unique space using the ruins of the collapsed chamber to set up a sunken subtropical garden. To this end, they persuaded the City Council and the community that it was worth retaining and celebrating the 'poetic and romantic' reservoir in disuse. They managed to change the public's opinion and transformed a 'dangerous' place into an exciting and welcoming public space.

The rehabilitation has preserved the oriental module, whose structure of octagonal wooden feet topped off and connected with pieces and arches of foundry has been completely restored and respected. As usual in this type of structure since Roman times, the longitudinal vaults are supported by lintels running parallel to the main walls. All these walls and the primary partitions of the construction are of trapezoidal section, except for the last span, which has with the same vault as the others but less width at its base.

The best preserved part is equipped with stairs and entrance doors, and it is visible although it is currently closed to the public by means of gates. The area where the roof collapsed has been treated as a recessed courtyard surrounded by arches, with water sheets and abundant vegetation. The rows of pillars and their corresponding vaults are suggested by some alignments of wooden studs. The communication between the lower level of the patio and the upper one corresponding to the roofs of the reservoir and the street has been solved with light metallic stairs and an elevator located in a corner.

Throughout the patio there are abundant brightly colored hammocks, widely used at any time of the day. Their users can move them to their convenience, looking for zones of sun or shade, provided by the trees as well as by the covered porticos of the extremes. Above the upper garden are high porches of current design, suggestive of the basic forms of the original structure, but in modern materials. They have double height and they effectively recall the original functions of the reservoir, in spite of being merely symbolic. The complex of garden, patios and reservoir is very useable and enjoys great public success, in addition to having received the applause of the critic and several landscaping and rehabilitation prizes.






Paddington Reservoir Gardens: plant. Courtesy of Tonkin Zulaikha Greer Architects



East Chamber

## The Sea Also Presides over Leisure

### Ships, Beaches and Surf

The sea also governs over leisure in Sydney, where sailing is a passion and having mooring or anchorage nearby is a must. As Twain put it, *the narrow inlets go wandering out into the land everywhere and hiding themselves in it, and pleasure-launches are always exploring them with picnic parties on board* [63:6]. In any corner of the port there are boats of all types and conditions and regattas are organized without any excuse. But also offshore races are numerous and some, such as the Sydney-Hobart, are among the most famous and difficult in the world.

The beaches are also a great pride of the population. In a land that negotiates between sea and land, and faces the bitter dispute of cliffs and rocks, the sand represents an approximation to the sea that is truly corporeal and conducive to enjoyment. One does not even need to bathe, or face the big waves or the sharks, it is enough to feel the sand under one's feet or walk along the shores.

And at the very top is surfing, that dynamic synthesis of bathing and navigation propitiated by the presence of the great waves of the Pacific. To glide looking for the right position, taking advantage of the thrust of the waves, is the most complete integration between man and nature ever dreamed of by philosophy. The fleeting journey over the crest justifies waiting for hours to catch the perfect wave and the exhausting strokes to surpass the others.

### The Beach as Public Good

In Sydney the sea is a passion, the beach is the locus of being and its culture is the hallmark of the Australians. For Caroline Ford, historian of cultural heritage, *the idea of a right to free access underpins the Australian beach ethos. On most beaches around the Australian coastline anyone can freely walk across the sand and into the surf. This right to free beach access is so central to our beach culture that any threats or perceived threats to free beaches are passionately defended.*

Communities think of the beach and create pressure on the managers of these environmentally and culturally significant spaces. However, this concept is itself a cultural construct, created just over a century ago and perpetuated through the declaration of protected beaches since the beginning of the 20th century [21:1].

### Bondi Beach

Bondi Beach is the place par excellence where this cultural process begins and where the first rescue club, the Bondi Surf Bathers Life Saving Club of 1906, was established. Its aboriginal name, Bondi, means *water that breaks on the rocks* and it is located only 7 km from the Central Business District. It is a key place for the history and culture of surfing that, since 2008, is part of the National Heritage.

Between 1855 and 1877, the wealthy O'Brien acquired the grounds, renamed them "O'Brien Estate," and turned the beach and its surrounding into picnic grounds and entertainment venue available to the people. As the beach became more and more popular, O'Brien threatened to close the access, but the Municipal Council intervened to turn it into a public reserve. On June 9, 1882, Bondi Beach became a public beach.

Once the restrictions for bathing were lifted in 1902, a tram service was established to communicate the beach with the city, later replaced by the Metro. In 1911, beach cabins were set up for about a thousand people. This very popular beach was known as the *playground of the Pacific.*

North Wollongong Beach and Surf Club pavilion, kiosk and club rooms, 1938. Courtesy of the collections of the Wollongong City Libraries and the Illawarra Historical Society, P14/P14424

Posters:

Seaside—*'Waiting for you' Travel by train; Take a Kodak,* travel poster. Australian National Travel Association. Artist: James Northfield. Courtesy of State Library of Victoria, 2013645989

*Australia,* travel poster. Australian National Travel Association, particulars at shipping and travel agencies. Percy Trompf. Melbourne: Troedel & Cooper PTY. LTD, 193-. Courtesy of Library of Congress, LC-USZC4-13600

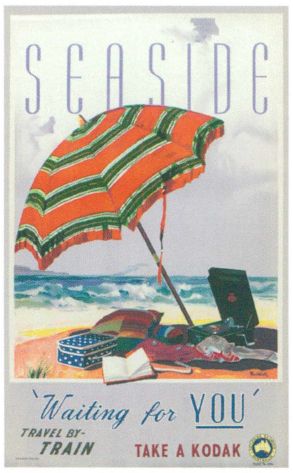
*Orient Line to Australia, 20.000 Ton Ships,* travel poster. Orient Steam Navigation Company. William Dobell, 1938

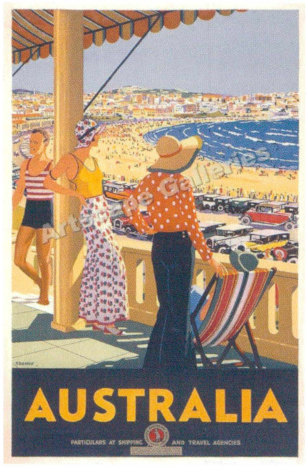
*The seaside calls, go by train, take a Kodak,* travel poster. Railway Company. Gert Sellheim

*Australia, sunshine & surf,* travel poster. Australian National Travel Association. Gert Sellheim. Courtesy of Library of Congress, LC-USZC4-13489

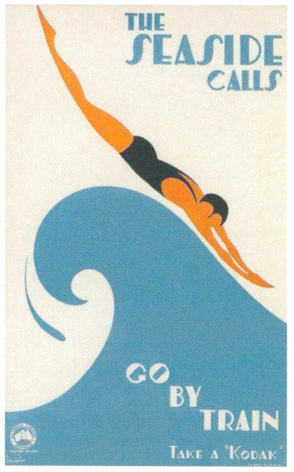
*Australia Surf Club,* travel poster, c. 1936. Australian National Travel Association. Gert Sellheim




SEASIDE
'Waiting for YOU'
TRAVEL BY-
TRAIN
TAKE A KODAK


AUSTRALIA


ORIENT LINE
TO AUSTRALIA
20,000 TON SHIPS
MANAGERS... ANDERSON, GREEN & Co LTD 5 FENCHURCH AVENUE, LONDON


THE SEASIDE CALLS
GO BY TRAIN
TAKE A 'KODAK'

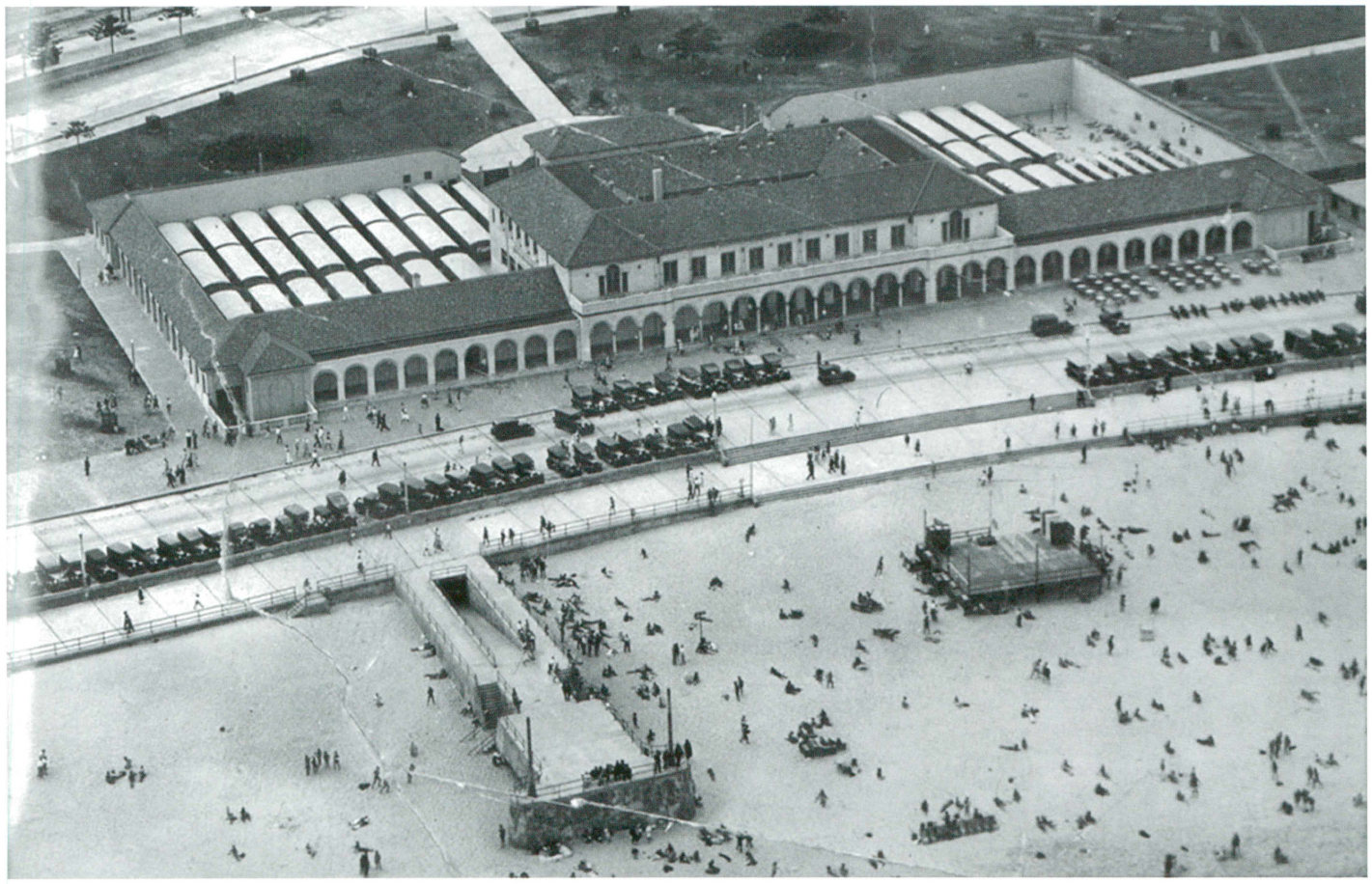

SUNSHINE
AND
SURF
AUSTRALIA


AUSTRALIA
SURF CLUB




Bondi Bay, Sydney, c. 1900 by Henry King. Courtesy of Power House Museum, Tyrrell Photographic Collection, 85/1285-1187

Bondi Pavilion, in the first half of the 20th century [29:16]







Bondi Beach



Bondi Pavilion Side-walk Cafe, 1929. Courtesy of Waverley Image Library, 000139-326

Bondi Beach Mural Wall






Bondi Beach and Pavilion

## Bondi Pavilion

The beach is presided over by the Bondi Pavilion, built in 1928 by Leith C. McCredie of Robertson and Marks Architects, with changing rooms directly connected to the beach sand by tunnels, hammams and a ballroom. It is centered on the beach, fronting the pedestrian promenade and Queen Elizabeth Drive, the new road that surrounds it. It has a kind of Mediterranean style, promoted by Professor Leslie Wilkinson of Sydney University, which is well suited to the local climate with the use of an arched porch for permeability and shade, a gallery on the upper floor and shutters to protect from the sun and filter the breeze [29:18].

Bondi Pavilion was very popular in the 1930s, with thousands of visitors attracted to the beach and surfing competitions, which demanded the placement of fences to control access by charging an entry fee. Beginning in 1960, the turnout began to decline, but it recovered its popularity in the 1970s, thanks to the reconversion of the dance hall into a new theater, which was later joined by a cultural center and gallery. It is included in Heritage records since 2008 and is one of the most visited and best rated sites, with 14 million annual visitors.






Sydney Harbour

Darling Harbour





Sydney Harbour

Bondi Promenade traverses Bondi Beach from one end to the other, bordering the prairie slope that faces the sea in Bondi Park. Part of its route is accompanied by the Bondi Beach Mural Wall, where contemporary and street art has been exhibited since 1970. These works, loaded with strong social connotations and political messages, have been made by world-known street artists such as Lister, Beastman, Mulga and Michael Wyatt. Skaters and skateboards also have their reserved space in Bondi Skate Park, where important competitions are celebrated, and which will soon be expanded.

## Enjoyment and Sport

The importance of living outdoors is favored in Sydney by the good weather and warm temperatures. This appetite for the open air manifests itself in many ways, ranging from the way of dressing to the celebration of events with family and friends on the beach. Children are used to walking barefoot from birth, and not just to play sports or have fun, but for any daily task. This practice, so common among the inhabitants of Australia and New Zealand, has begun to spread to other parts of the East Coast of the United States and to some central European countries.

For Australians, the culture of sport is a fundamental part of their lives. They practice all kinds of sports and at all times, from childhood to old age. There are multiple sporting events and competitions; these shows constitute real meeting places and are part of the life of Australians. Sydney's unique location on the bay favors the feeling of living surrounded by water and the practice of water sports takes on a huge importance. All sporting events that have something to do with the sea are welcome and practiced in Sydney and, in many cases, have been invented there.

## First Yacht Clubs

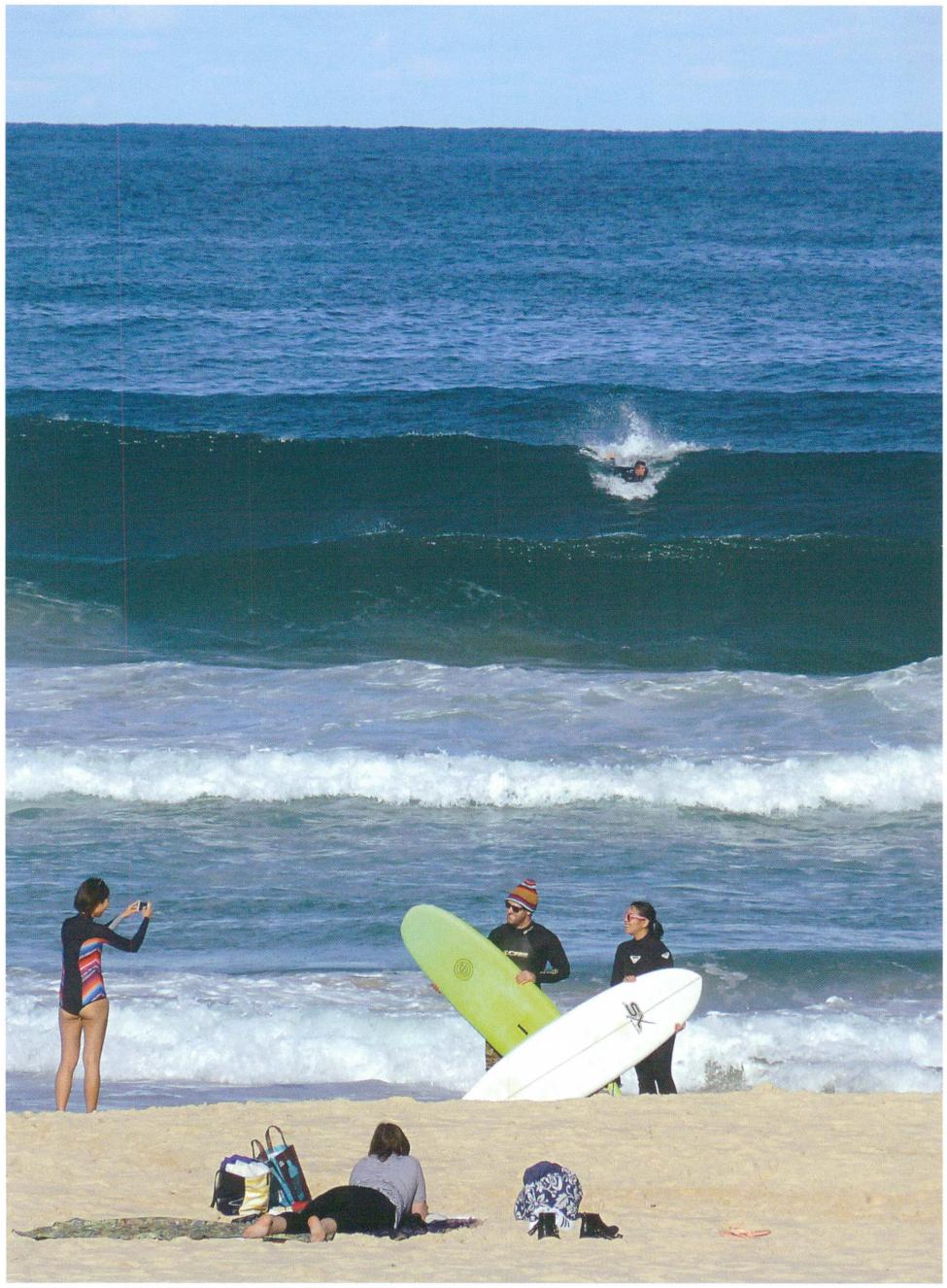
The enjoyment of recreational yachts began to become widespread in Sydney Bay in the 1860s, with the creation of the first sailing boat regatta teams. The first one seems to have been the Australian Yacht Squadron, a group formed in 1862 to sail *'for fun and honor'* in the clean waters of the bay, and was followed by the Royal Sydney Yacht Squadron. The yatch owners were seafarers, bay passenger boat businessmen, merchants and many of the owners of residences on the water's edge [35:141].


UBS

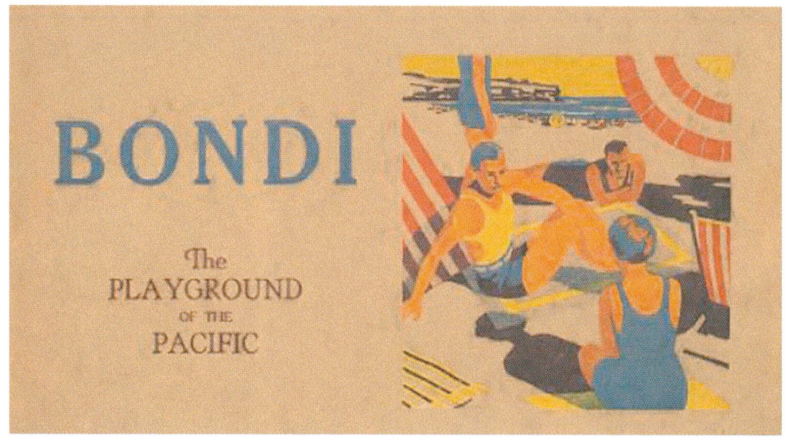
## 'Sliding Sports'

Driven by their own movement, such as in swimming, or by the wind in sailing and surfing, Australians enjoy the peculiar sensation of sliding through the water. In a memorable article entitled *Games and Sports,* Rafael Sánchez Ferlosio distinguishes between the two on the basis of the kinesthetic sensation of sliding for pure pleasure, without being subject to any rule, characteristic of *anomic* sports:

*Sliding sports, be it on a sloping and fairly polished surface, or on a horizontal but strongly slippery, such as the winter ice of pools and ponds —the roller skate remedies the lack of such surfaces— are sports without rules, anomic. It is true that in order to skate one must learn, but such learning consists in acquiring a technique; a rule is a law, a technique is not a law.*






Lifeguard in Manly Beach

Surfing in Bondi Beach

*Bondi: the playground of the Pacific.*
Touristic flyer to promote Bondi
h. 1930. Waverley Council, 1933



Coogee Bay, Sydney (Bathing machines), 1880. English, Photograph edition. Tyrrell's Museum, Sydney (1926). Courtesy of Pictures Collection, State Library of Victoria, b51331

And he insists that the body's joy in harnessing these forces *allows to highly privilege kinetic performance over bodily effort. Therefore, this type of sports are not just anomic sports or games —if we agree that a technical skill is not a rule— but also advantageous or gratuituous, since their enjoyment consists in the reduction of effort. They are sports without goal, because they do not aim at getting anything at the end, but merely to obtain pleasure at every moment.*[33]

Ferlosio concludes that this type of activity allows one to aim directly at happiness and contrasts it with activities and sports aimed at winning. It is true that there are swimming championships, surfing competitions and sailing regattas, but those who practice these nautical or maritime game-sports know well that the variable sea conditions neutralize the incontestable validity of the chronometer and the tape measure that prevails in athletics. In them, enjoyment and camaraderie prevail over the result.

The enjoyment of these anomic sports can turn into tragedy, by virtue of the changing conditions of the wind and the sea. As the French geographer Enric Dardel pointed out, *human beings must protect themselves from the fury of the water and wind unleashed, from the enormous capacity for destruction of waves, tides and currents, of that soulless power that arises from the bowels of the world* [14:91].

This protection is expressed in many ways, ranging from facilities, learnt skills, regulations and prohibitions, constituting a true culture of the sea that, in Australia —and in Sydney in particular— is well-known. A good example of how to approach the issue of risk at sea is the construction of pools by the shore, the ubiquitous *seaside pools.* In fact, they are not on the shore or at the edge of the sea, but in direct contact with it.

## Risks at Sea

With a few simple walls and gates, these pools allow bathing in sea water, without having to face the frequent presence of sharks, the strong currents or the large waves. However, their resistance is limited, the waves can break their walls or surpass them and drag away those who use them. It is understood that they are installations in continuous repair, which rub shoulders with the sea but accept its absolute dominion over them, as is the case with the sand of the beaches, always in balance with currents, waves and tides.

## Seaside Pools

These semi-natural facilities have a landscape character, as they are strategically placed, barely noticeable from the beach, being embedded or camouflaged among the rocks. Their simple geometric shapes and rough concrete walls form part of their simple and timeless architecture. They allow you to swim safely without fear of sharks, or the rough seas, and usually are associated with a club or pavilion. Their popular character and their role as social places of leisure and meeting turns them into civic spaces, with a role of physical or psychological oases, which are part of the life and memories of the people of Sydney [33].

At the southern end of Bondi Beach are the legendary Icebergs (1929), the marine pools located not near the shore, but in the sea, among the rocks bathed with foam. In his book *30 days in Sydney,* Peter Carey talks about their relevance and considers them *'a Sydney institution': it is a public pool, a democratic pool, rough at the edges, frequented by all sorts of people, amongst them leather-skinned sixty year olds in Speedo trunks and faces like last winter's potatoes.*

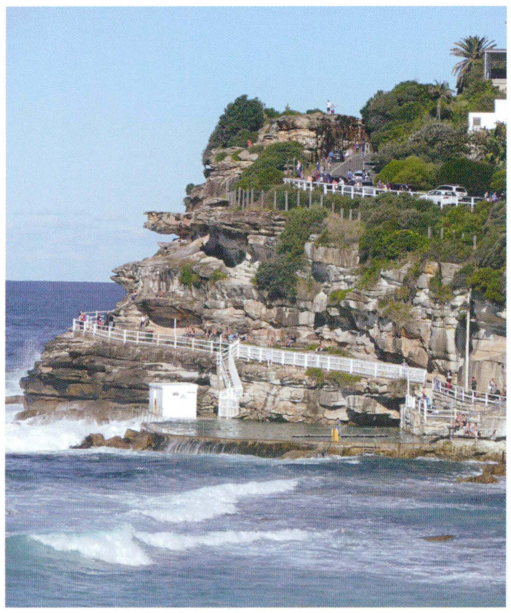






Giles Baths and Bali Memorial, Coogee

Bondi Icebergs Pool & Club





Bronte Baths

Bondi Icebergs Pool & Club





Giles Baths and Bali Memorial, Coogee

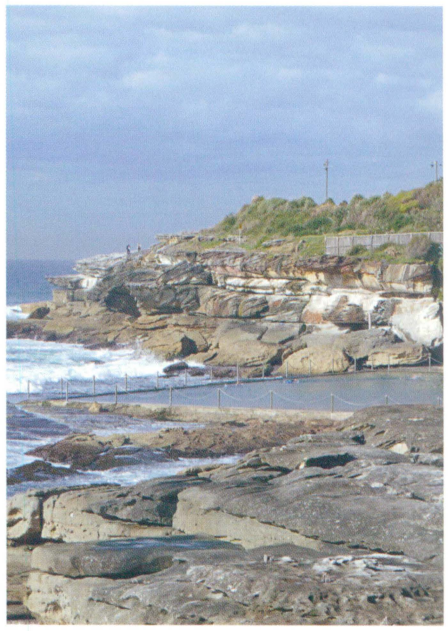
Clovelly Ocean Pool in Clovelly Beach





Mciver's Baths, Coogee

Ross Jones Memorial Ocean Pool, Coogee



Wylies Baths, Coogee

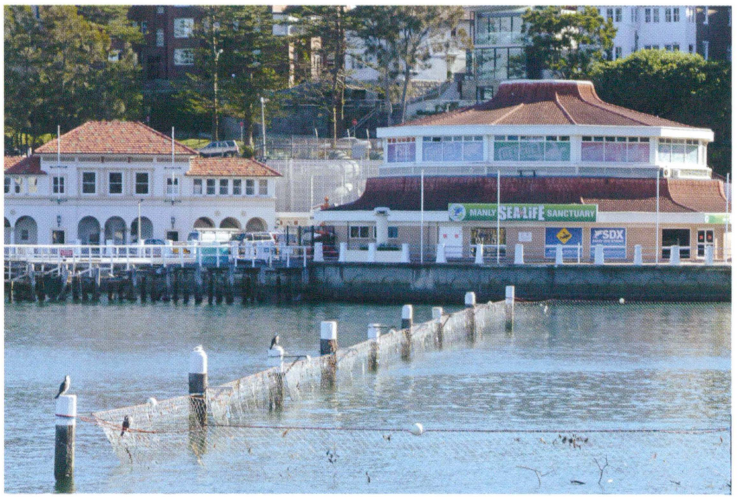


Mciver's Baths, Coogee






Swimming Gala poster featuring Beatrice Kerr, c 1906. Collection Reproduced courtesy Australian National Maritime Museum




Baths, Manly Cove (on the old Manly Baths, 1878)

*Even the dog stops licking to watch the waves crash over the wall, cascade off the edge, foaming and spilling on the rocks beneath. The force of the ocean gives it an exciting, vaguely dangerous air* [9:92].

## Baths in the Bay

The first *Harbour baths* were built in Sydney Harbor, near the center of the city, such as the one constructed in 1833 by Esther Biggs on the shore of Woolloomooloo Bay. Many of these baths only have a buoy-based delimitation and a ladder for easy access. The ones located in open sea were closed with ropes on poles to provide a handle to the bathers or with meshes or nets to avoid the sharks.

The baths were places where racial segregation between aborigines and settlers was evident; so that Aborigines were only allowed to swim at certain times of the day. The pools were places of continuous rallies for equal rights, symbol of Aboriginal exclusion and part of the history of Australia [57:27]. Many of these pools were originally promoted and maintained by local residents, often Olympic swimmers; others began to be built officially as a drag effect of the Olympic Games.

In Coogee there were many pools, some still active. The oldest ones were located at the end of the nineteenth century at the north end of the beach; they were known as "The Bogey Hole" and were exclusively for men. Subsequently, wooden changing rooms were placed in the reserve of the top of the cliff and they changed




Women in bathing suits on Collaroy Beach, 1908. Courtesy of State Library of NSW, a845002



Members Manly Amateur Swimming Club, c. 1922 (Manly Baths). English, Photograph edition. Courtesy of Manly Library Local Studies Collection, 001877

their name to Lloyd's Baths. Later, they were called Randwick Municipal Baths, and they feature Sydney's largest pool, built mostly on natural rock. In 1929 O. E. Giles opened the Giles Hot Sea Baths, a building with arches that offered treatments, massages, hydrotherapy and hot baths.

### Shark Nets

In those years the popular shark net was inaugurated on the south side of the pier, in the presence of 135,000 spectators and 10,000 surfers. The net was attached to one of the dock pylons to the southern tip of the bay, allowing safe bathing for 800,000 people, but it was dismantled in 1945 after the deterioration it suffered during World War II. The bathhouse was closed after damage caused by the major storms of 1974, but was later extended and reopened as Giles Health Center in an area now known as Dolphin Point.

At the southern end of the beach is Ross Jones Memorial Pool, built in 1947 and dedicated to Roscoe Jones, councilor of Randwick's East Ward (1934-1937). It is closely related to the Surf Life Saving Club, next to which it is located. During high tide and rough seas the waves surpass its concrete walls, marked by a kind of battlements.

### Baths for Lifeguards and Champions

Also in and near Coogee are the McIver's Baths, intended for women and children, and Wylie's Baths, open every day of the year since 1907 as shown by their poster. These, cataloged by National Trust of Australia, were the first examples of mixed baths, constructed by the long distance champion and diver, Henry Alexander Wylie; His daughter Wilhelmina, along with Fanny Durack, were the first two female Australian Olympic women's swimmers and first Olympic medals for women.

The Bronte Baths, also known as Bond Ocean Pool, in honor of the pioneer lifeguard Major Bond, are located at the end of Bronte Beach and are delimited with thin posts joined with a rope. Aquatic sports and leisure centers are now being set up




Octagonal Bar, Randwick Racecourse

around new or refurbished swimming pools, such as the Andrew Boy Charlton Pool at Woolloomooloo Bay, adjacent to the Royal Botanic Garden. It was named after the world-class 16-year-old swimmer in 1924. It was built in 1963 on the site of the former Domain's Baths and has been renovated in 2012 with a grandstand for 1,700 spectators. There are also initiatives like Parramatta City River Plan that are recovering many of these historic baths and pools, not only in the bay but also along the Parramatta River, filling the entire coastline with activity.

Among the non-sea related amusements, horse racing is worthy of mention. The Randwick Racecourse, built in 1833 with convict labor and under the direction of Mortimer Lewis, is a substantial element. It had successive temporary stands until the construction of the Grandstand in 1875-1876 and, finally, in 1886 the great brick building Victorian Members' Stand or Officials Stand, of 33 meters length and with a capacity for 450 spectators seated in its upper floor, with bar, cafeteria and telegraph office on the ground floor. The grandstand was enlarged with a new Ladies' area and St Leger Stands, and a large Tea House inspired by Indian colonial architecture.

## Horseraces in Randwick

In 1917 two automated betting buildings were built, one of which is still preserved, housing the Octagonal Bar. They are composed of two octagonal pavilions topped by a dome lantern and joined by another two-storey administrative building with Doric columns and a clock tower, all designed by Robertson & Marks. In 1969 another stand, of utilitarian and standardized architecture, was inaugurated between the old Grandstand and the Members' Stand: the Queen Elizabeth II Stand. In the 1980s the deteriorated St Leger Stand and Grandstand were demolished, and the new Paddock Stand (1992) was built with two floors and preserving the charm of the old grandstands, but it was demolished again in 2012 for the construction of the new Grandstand [55].





Victorian Members' Stand, Randwick Racecourse



Derby Day at Randwick, 1937. Courtesy of State Library of NSW, Home and Away – 16301, oai:sl.nsw.gov.au:20888



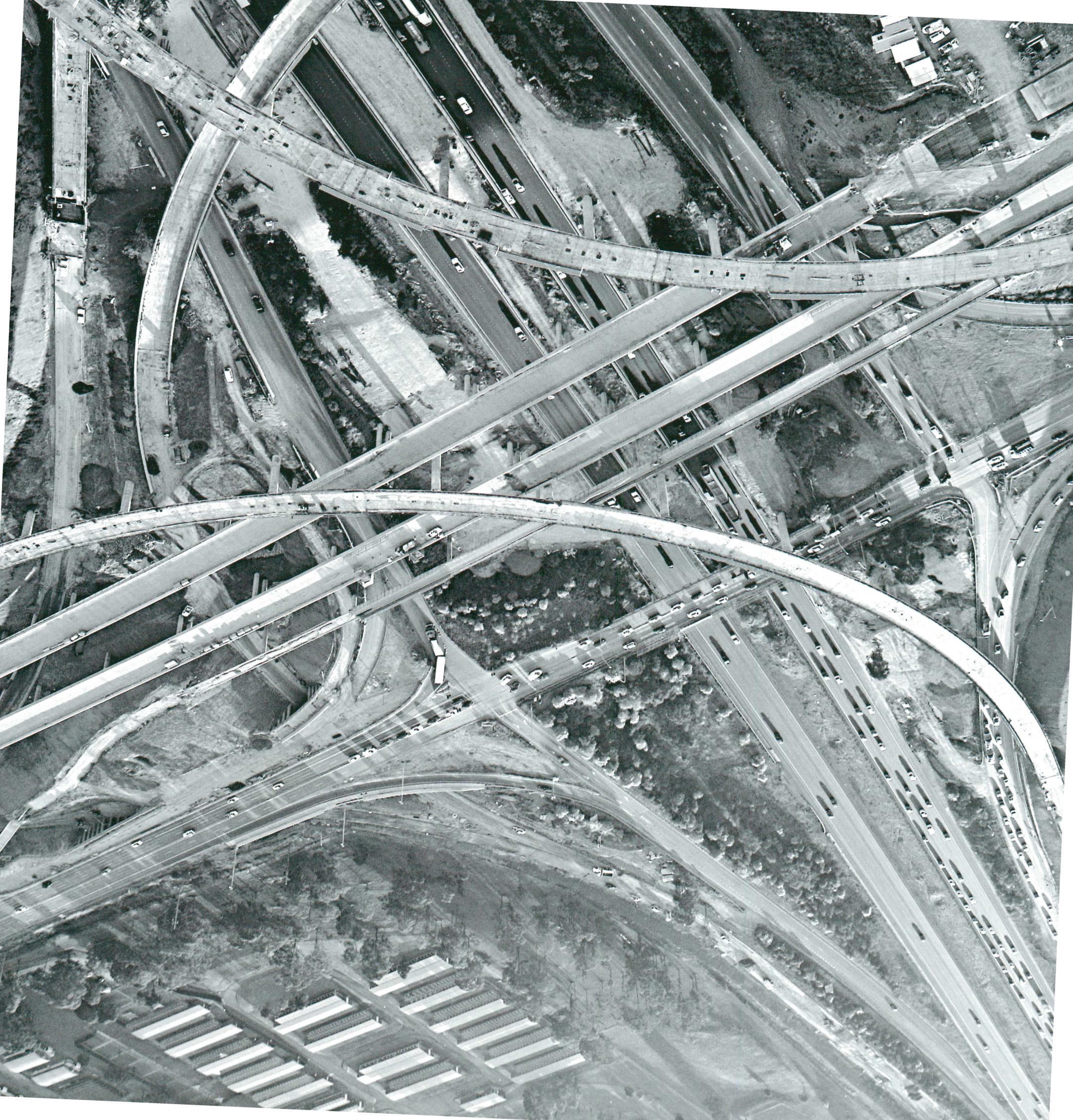



## Racecourses and Clubs

Slowly other racing sites appeared in the suburbs, such as Canterbury Park Race Club, to the Southwest of Sydney next to Cooks River. It reached great popularity in the 1840s and in 1884 was complemented by a recreational park and a zoo; starting in 1998 the official races ceased and it remained in use mainly as training site and as venue for the celebration of fairs and events. At Canterbury Park and at Rosehill Gardens, adjacent to Sydney Olympic Park, the Sydney Turf Club operated from 1871 and 1885 respectively, in charge of securing ownership of the metropolitan area racetracks. In 1923 the horseracing offerings were extended with Warwick Farm, located 30 km to the southwest of the urban center of Sydney, in Hume Highway, with a large parking and next to a train station. Conferences, meetings and fairs are currently held there.

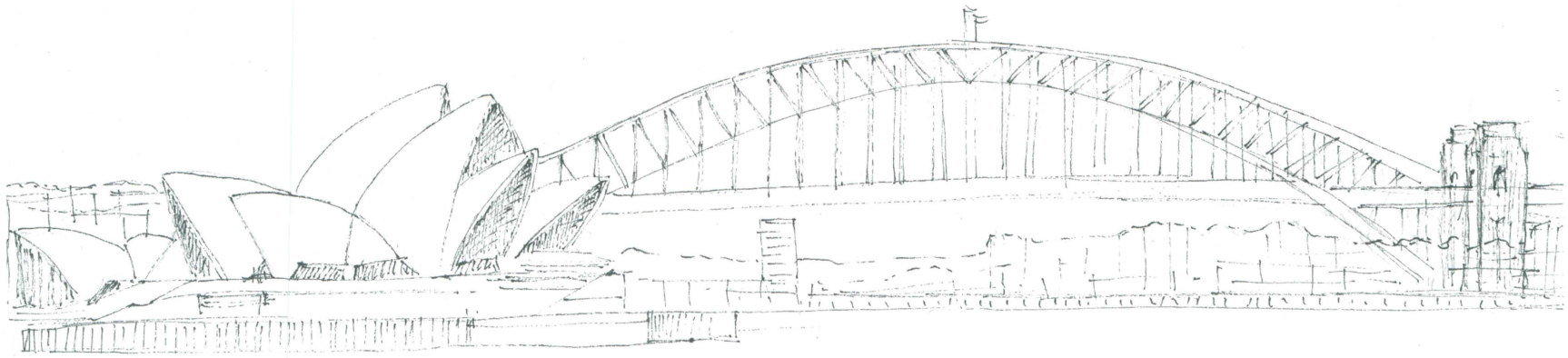
In 2011, the former Australian Jockey Club and Sydney Turf Club were merged into the new Australian Turf Club. All racetracks are preserved, the largest being Royal Randwick Racecourse, where the club is based, holding major races and events with spectacular views of the city. It has the old Members' Stand or Officials Stand (1886) and the new Royal Randwick Grandstand, 110 m and six stories high. On the premises are located the old buildings next to the modern facilities of 2012, work of Fitzpatrick & Partners with interior design by Woods Bagot, dominated by aluminum beams, wood panels and large glass panes.

Royal Randwick Racecourse, 1948. Crowds of men and women at totaliser near rear of main betting area. Courtesy of City of Sydney Archives, SRC11917, oai:cos.photosau.com.au:038316



# 4 | Roads of Overcoming

The New Mobility / Times of Improvement / Landscapes of Old Mobility / Songlines / The American Derive / Disregarded Warnings / Visits and Stays in America / Docks, Stations and Public Buildings / Heritage in The Rocks / Commission for the Improvement of Sydney / Keys of the Public Transit / Electric Transit / Traffic and Access to the Suburbs / Vital Ramifications for the City / Preserving Beauty / Electric Railroad Network, 1916 / Location of the Stations / The Tyranny of Level / From Tram to Light Rail, 1997 / City Center Parks / Modernism in Hyde Park / Anzac Memorial / Sandringham and Nagoya Gardens / Contrasts of Character / Cook and Phillip Park / Prince Alfred Park / Sport Grounds and Facilities / Expressionism - Art Deco / More Water for the City / Launch of the Upper Nepean / Delays and Eventualities / Four Dams by the Administration / Innovations in Dam Building / The Picturesque Cataract Dam, 1907 / Electricity and Prefabs / Egypt in Cordeaux Dam, 1927 / Arcades of Lotiform Columns / Classicism in Avon Dam, 1927 / Art Deco in Nepean Dam, 1935 / Cutbacks in Woronora Dam, 1941 / Guarantees with Warragamba Dam, 1960 / Origin and Destination of the Water / Treatment and Discharge of Effluents / Harbour Bridge, 1932 / Early but Late / Successive Overhangs for the Span / Unwise Criticisms / Contexts and Nuances / Bradfield Visits New York / Image versus Economy / Success of the Arch / The Harbor, Initiatory Destination / Pedestrian Circuit / Sorry Day Bridge Walks / The Sydney Harbour YHA / The Rocks / Circular Quay, Heart of Sydney / Circular Quay in Sydney Cove / Station and Viaduct by Bradfield, 1956 / Waterfront / Commissariat Store, 1940 / Formation of the National Trust, 1945 / Museum of Contemporary Art / Customs House / AMP Building, 1912 / To Macquarie St through Moore Steps, 1861 / BMA in Macquarie St. / Coastline, Parks and Beaches / Remaking the Waterfront / Observatory Hill Park / Dawes Point Park / Wentworth Park / Glebe Railway Bridge, 1892, 1922 / Chinese Garden of Friendship / Cremorne Reserve / Reclamation and landfills in the Shore / Beaches and Parks: Bondi, Coogee / Risks / Wavesurfing, 1914 / Manly, Beach and Surf.



Sydney Harbour.
PHL, 2016

## Times of Improvement

## The New Mobility

The strength of the newly 'awakened' city manifested itself in the outbursts of new lifestyles in work, family and leisure, effortlessly assumed in other cities of slower evolution but in need of physical and institutional improvements in Sydney. The problems that arose here were not very different, but their solution required a special concentration of knowledge and efforts that its rapid evolution had not developed. The recognized and pressing actions required by the city had to be prioritized and the most urgent seemed to be the new demands of mobility, in an ever expanding city.

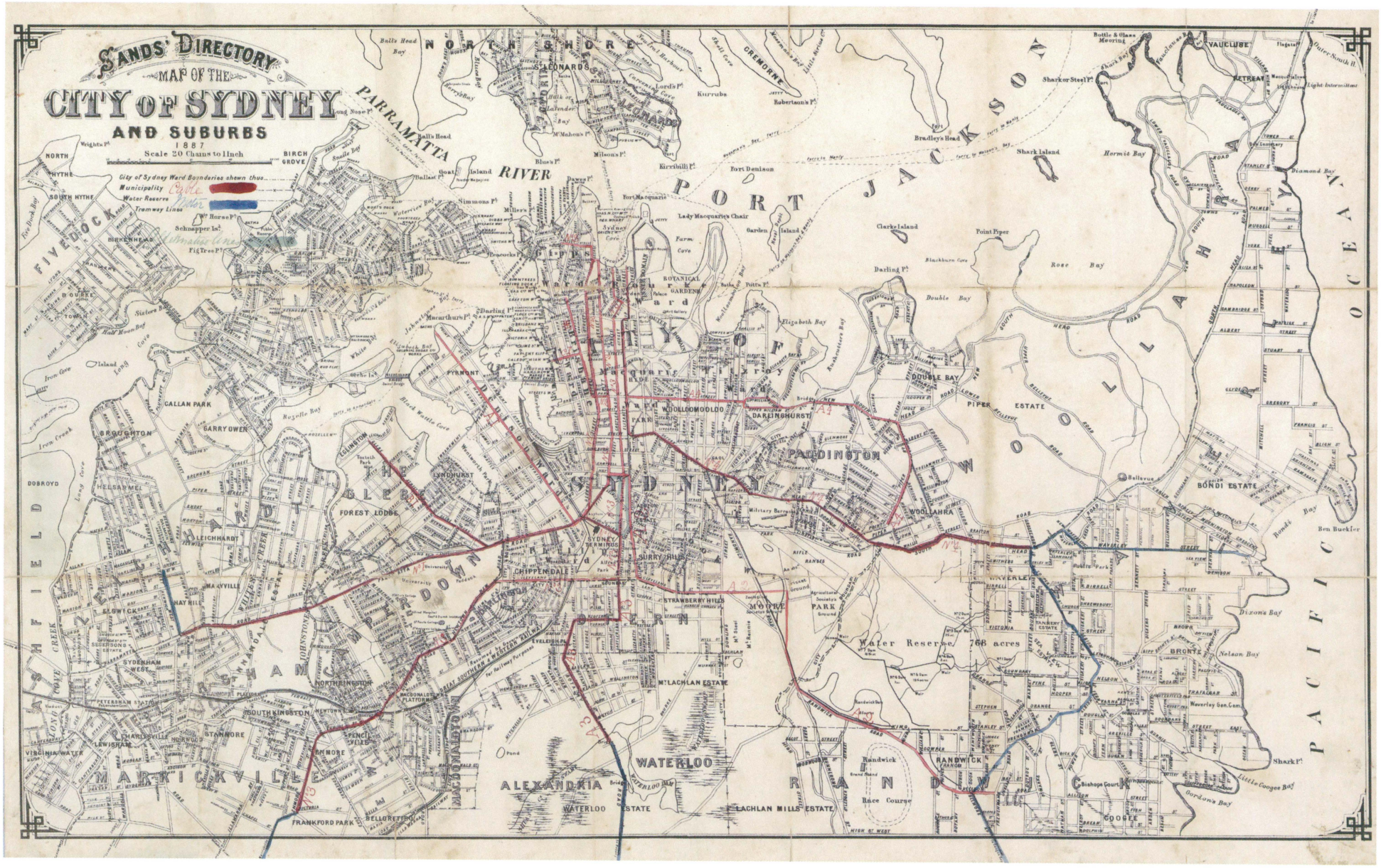
When planning the city's territorial growth and its new mobility, Australian engineers ignored their British ascendancy and chose the American model both in their understanding of trams and railways and in their subsequent embrace of the automobile. The explosive development of the suburbs overcame all attempts to plan generalized rail networks, first tram and later Metro, on account both of constructive reasons derived from the irregular profile and omnipresence of the bay, and of the high cost of extending the Metro network to all the suburbs.

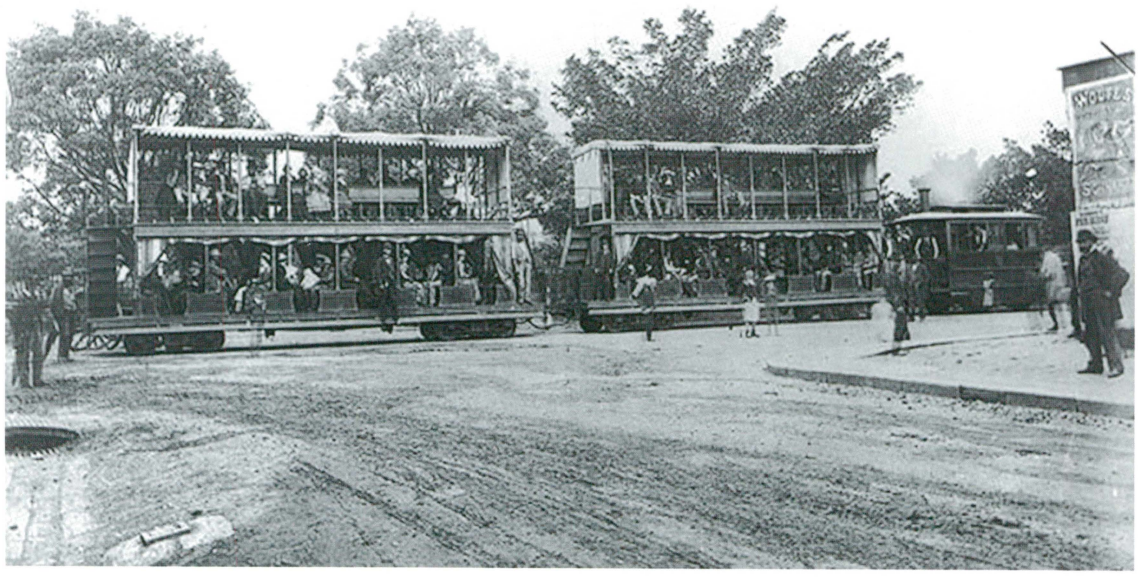
But it was also imperative to build the dams necessary for the water supply to the city, and the port demanded changes in the coastline to achieve a greater number of moorings and more length of docks. In both cases, this involved port fillings and dredgings which, on top of everything, also had attend to growing passenger traffic with docks and wharves near the center.

## Landscapes of Old Mobility

These ways of living developed on a territory that was neither easy nor virgin. The Australian territory is originally characterized by very defined physiographic and climatic characteristics, with extreme demands on the ways of inhabiting it. Periods of extreme drought in the Australian interior temporarily limited the permanence of settlements and required their inhabitants to be permanently ready to move when natural resources were depleted. This imposed mobility was different from the mobility embraced as the way of life of the nomadic peoples, and it also differs from the contemporary desire to travel. It was something imposed by the territory, which forced the natives to know it well and to treat it with great respect.

When Bruce Chatwin tried to investigate the Aboriginal systems of territorial recognition, he only found boredom and animosity. There are many white men, usually prejudiced, who have tried to do it with little fortune, and the writings of Chatwin himself were not well received by the Australians.



Map of Sydney and suburbs, tramway lines, 1887. Sand´s Directory. Courtesy of City of Sydney Archives - Historical Atlas of Sydney

The first steam tram at the intersection of Market St and Elizabeth St, Sydney, NSW, 1879. Courtesy of State Records NSW: NRS 17420, State Rail Authority Archives Photographic Reference Print Collection, 17420__a014_a0140001141



Garrtjambal - Kangaroo, 1985. George Milpurrurru. Courtesy of Art Gallery NSW. © George Milpurrurru/Bula'Bula Arts. Licensed by Viscopy, Sydney

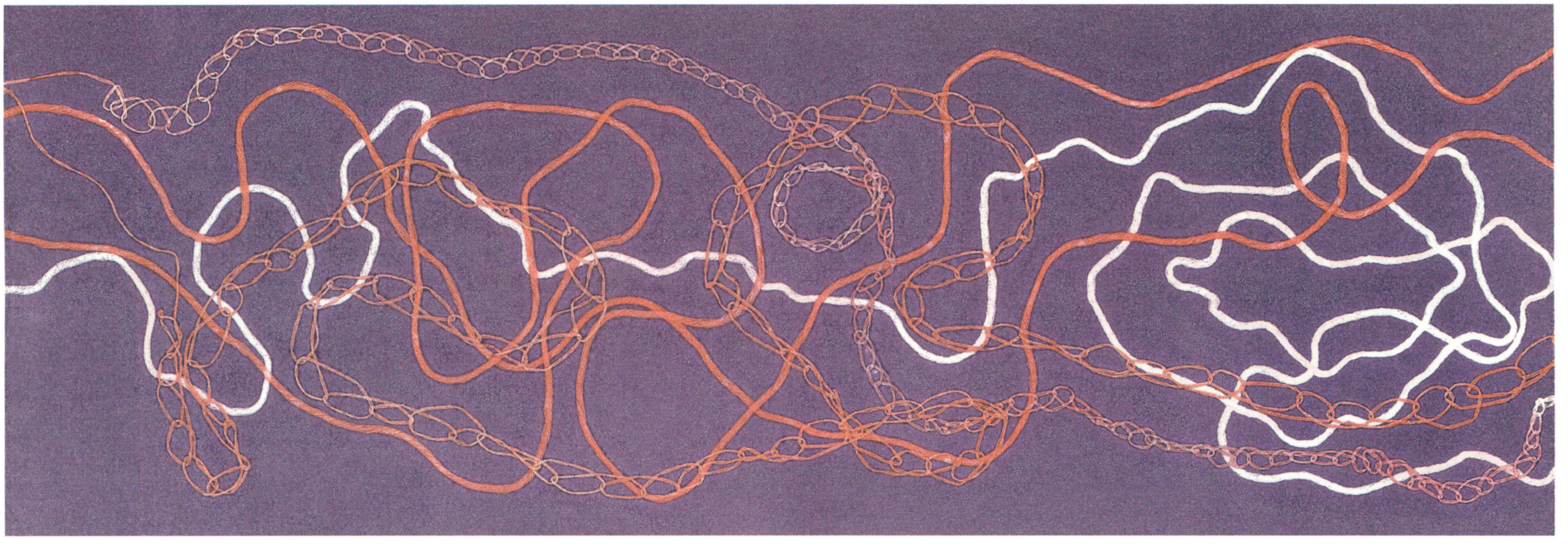
## Songlines

White men all made the mistake of supposing that, as the Aborigines were nomads, they could not have a land tenure system. This was false. The Aborigines, however, could not imagine the territory as a block of land bound by borders, because they saw it as an unlimited network of 'lines' or 'ways of passage:' all our words that mean 'land' are identical to those that mean 'line.'

Chatwin sees a certain logic in it, for most of the interior of Australia is an arid scrub or a desert, with very sporadic rains, where a year of abundance followed seven of penury. To move through such a landscape was to survive; staying in the same place was suicidal. To feel comfortable in a 'land,' it had to have at least four ways out, to escape in case of crisis. And each tribe had to cultivate relations with its neighbors, to facilitate exchanges, always carried out according to rules and formal routes. Aborigines attribute similar mobility to goods, considered potentially evil if they were not in perpetual motion. It was not so much useful goods as simple exchange objects for self-sufficiency, such as feathers, sacred objects... symbols of an intention to share presences, songs, resources and ideas without any intention of profit [10:69].

A shell could traverse from hand to hand the whole continent, by paths inherited from the beginning of time. These paths followed the line of the inexhaustible wells of water which, in turn, were the ceremonial centers where the men of the different tribes congregated.

These trade routes always follow the course of a Songline inherited from the ancestors, or rather, they are themselves the Songlines, because the main means of exchange are songs, not objects. Trading with objects is the by-product of the exchange of songs. Before the arrival of the white men, in Australia no one lacked land, because everyone inherited, as private property, a section of the Song of



Songlines nº 2. So Yoon Lym, Monotype on Paper, 2011. © So Yoon Lym

the Ancestor and the section of the ground on which the song ran. The verses of each individual were the titles of property of the territory, and he could lend or exchange them, but never sell them.

When the elders decided it was time to sing their full cycle of songs, they summoned the song owners to the Big Place. Then each 'owner' sang, when his turn came, the section of his Ancestor. But the right order had to be respected, for singing an out-of-place verse was a crime, generally punishable by death. This would imply uncreating that which had been created [10:70].

Song cycles are independent of tribes, boundaries and languages, but are recognized by their cadence, always the same from the first chords to the end. Theoretically, a walker could sing his way from one end of Australia to the other, with the only condition of humming the right melody. In practice, however, the elders advised not to cross more than three or four 'stops.' A stop meant a transfer point, a place where the song ceased to belong to its owner, where he no longer had the responsibility to watch over it or the ability to lend it: you sang until the end of your verses and there was the border [10:72].

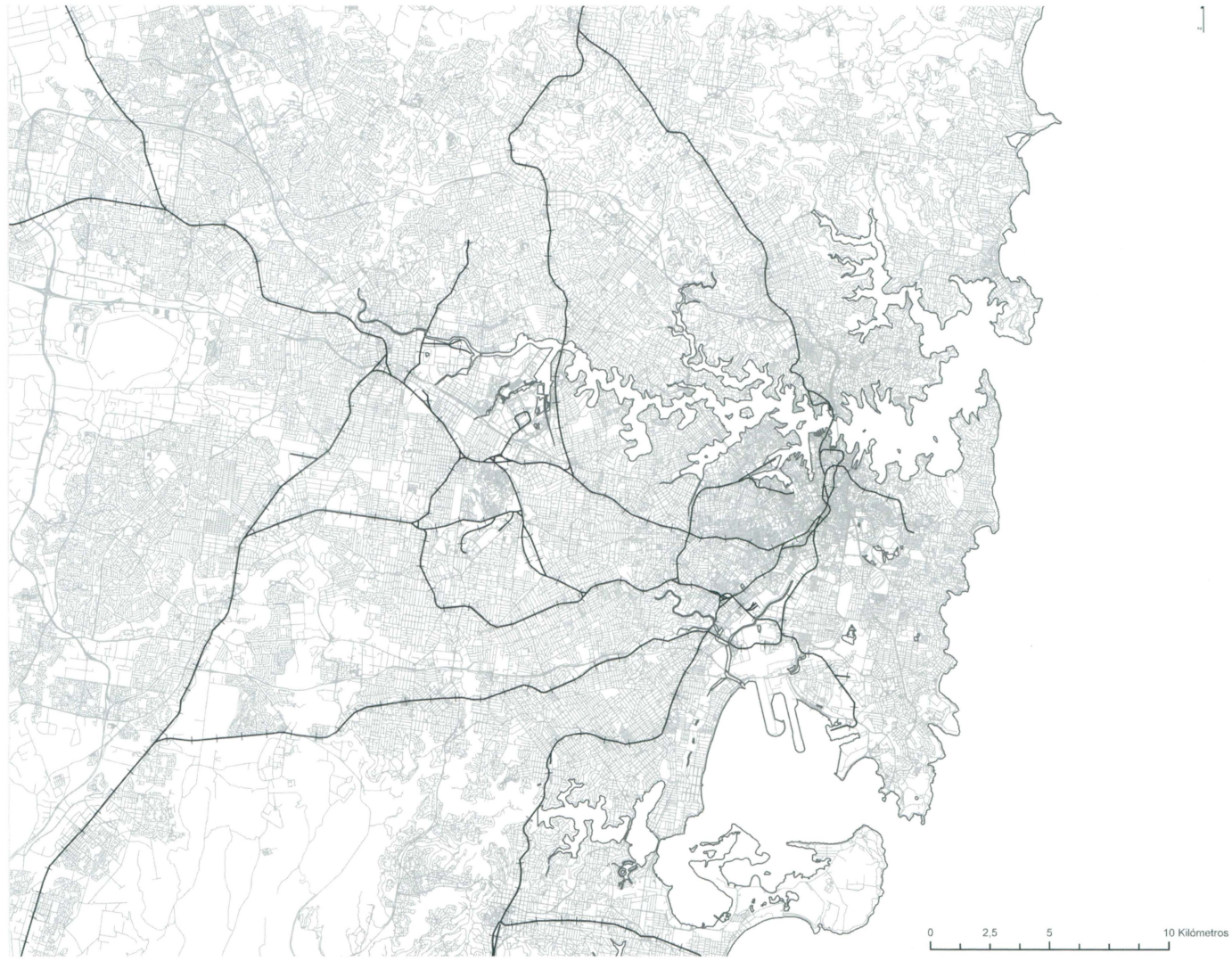
At one point of his inquiry, Chatwin offers a legend about the origin of the musical sense of it all: Each Patriarch... designated the water well, the cane fields, the eucalyptus... he signaled right and left, engendering everything through the imposition of names and interweaving the names into verses... The Patriarchs made their way singing all over the world. They sang the rivers and the mountain ranges, the salt lakes and the sand dunes. They hunted, ate, made love, danced, killed: wherever they went, their footsteps left a trail of music. They wrapped the whole world in a mesh of music; and finally, when the earth had been sung, they felt exhausted [10:87].

Each territory had an 'owner' or 'patriarch,' responsible for its conservation, for the practice of singing its songs and the punctual fulfillment of its rites. But this patriarch must, in turn, respond to a 'supervisor' or 'helper,' usually of another clan and of a different generation, responsible for another territory. Both practiced reciprocal rites in their respective regions and worked as a team to preserve them. Their age difference enhanced the possibility of transmission of ritual knowledge from one generation to another. In addition, the landlord was not ultimately the 'owner,' but a member of the neighboring clan... and vice versa, which augmented the magic of the system, and made war more difficult [10:115].

It even seems that a man of the A tribe who lived at the end of a Songline could hear a few stanzas intoned by the Q tribe and, without knowing a word of Q's language, know exactly what the territory was which was being sung. Of the many stories told to try to explain this, it seems that, independently of the lyrics, the melodic outline of the song describes the nature of the terrain where it flows.

According to this, certain musical phrases, certain combinations of notes, describe the action of the ancestor's feet. One phrase said 'salt lake,' another 'riverbed,' 'sand dune,' 'acacia hill,' 'rock wall' and so on. It would be enough for an expert singer to listen to the correlative order to tell how many times his hero crossed a river, or climbed a mountain range, so that he could calculate at what point of the Songline he was and how much he had advanced in it.

In this way —summarizes and wonders Chatwin— is a musical phrase a topographical reference? Or is music a memory bank to find our own way in the world? [10:126].




Sydney's Railroad Network.

## The American Derive

As he himself relates, he had to demonstrate his knowledge of anthropology with erudite mentions of other nomadic peoples and to buy many beers to get some direct explanation of how to understand the territory of the Aborigines.

However, despite the fact that it is not scientific to many, his reading is attractive, because it is a mere personal record of another way to understand the Earth and create a 'world,' and it is thus worthwhile to include here some of his reflections on the Aborigines.

Facing the flood of new and diverse needs, it was necessary to fit the pieces and plan actions. At the time of World War I, an organized planning movement, based on urban planning associations from the state capitals, began to convene in Australia with conferences, advisory boards, legislative initiatives and experimental communities. Australia connected with the rest of the world through books, journals and study visits, but during this process, the United States remained the main source of inspiration in every way.

In the 1920s, the most distinctive feature of Australia's planning was the search for comprehensive metropolitan master plans and experimentation with new organizational forms for planning, influenced by the model of the City Planning




Pedestrians and traffic on Pitt Street, Sydney, 27 December 1920?. Fairfax Corporation 1920, Courtesy of Fairfax Syndication, FXT267167, [nla.pic-vn6301426]

Commission. The most notable experiment was the Sydney Regional Plan Convention (1922-1926), a private body inspired by the New York Regional Plan. [25:196].

Australians seemed seduced by the American way of dealing with the problems of scale in their country. English and European approaches to urban planning were of little value in endless territories, thirsty for occupation due to the thrust of economic prosperity. The immediacy of the American model imposed itself by the mere force of events: the opening of a highway was much cheaper and faster than the construction of a consistent public transport system. And just like in America, established industrial interests were not flexible enough to offer alternatives that were effective, or even viable in temporal terms.

## Disregarded Warnings

Responsible professionals did not fail to raise the alarm on the effects of a generalized adoption of the American model. Sydney Metropolitan Planning Director Rod Fraser argued the need to make a critical reading of the model, given the country's sparse population and resources. He accurately predicted the impact of large shopping centers on the central hubs of the suburbs and alerted of the

consequences of the absolute dependence of the automobile in the development of the city.

But the appeal of the US was stronger than formal education and the British principles of planning, so their influence continued into later decades. Although British education continued to have a major presence in universities, many graduates began to visit the United States to complete their formation.

## Visits and Stays in the US

George Clarke, a distinguished planner of the 1970s, studied at MIT with Lewis Mumford, worked in New York with I.M. Pei in the late 1950s, and sought inspiration in Philadelphia's planning with Ed Bacon, considering that city as a planning and governance model well suited to be introduced to Australia. Another Sydney consultant, Terry Barnes, studied at Yale in the 1960s and worked on the urban renewal of New Haven before returning to Australia to take charge of planning North Sydney, one of the city's first large-scale plans.



City Railway construction, tunnels leading to St James station, taken in 1924. Courtesy of Australian Railway Historical Society, Railway Resource Centre, 507097

The inevitable result of these influences was the low-density suburb (*sprawl*), a type of urbanization that generates a specific way of living that entails social, economic, energy and environmental problems with very difficult solutions. However, the city was able to digest the American influence, leading to changes and transformations of such a caliber that it is necessary to speak of an 'australization' of the American guidelines and not of their simple adoption. Among the modifications and adaptive behaviors, the attention given to public works, buildings and spaces stands out, often lacking in the American model.

*How should we value the economic, social, environmental and civic benefits of a Hyde Park, or a Sydney Town Hall?* wonders Philip Thalis, reflecting on The Public Project in Sydney [58:14-35], and he continues: *Or justify on conventional economic grounds the resumptions of land and cutting through of Martin Place by successive governments, finally realized in the 1960s? How should we take into account the multiple benefits and opportunity costs of such projects?* The assessment of the permanent elements of a city challenges current financing practices and the basis of cost-benefit analysis. *Measurement must be factored across decades, even centuries, and the benefits extended to adjoining streets, for the flow-on effect of such public work is pervasive.*

The first railway from Redfern terminus, and Sydney's Harbor Bridge, are some of the most expensive fixed assets in Sydney's history, perhaps in New South Wales. *What would the cost of replacing the City Circle railway be today? How would we measure across eight decades of embedded property values accrued since the railway was inserted, or quantify the myriad effects of the many millions of passenger trips?* Strategic Public Works, such as permanent railways, reinforce the commitment, allowing reliable and secure long-term planning [58:32].

Facing these questions, Philip Thalis really goes beyond both the economic questions of cost and of pure urbanism, and delves into topics of character, identity, events and scale of the works, which pertain to the discipline of landscape studies and are really essential to understand the city. Public Works remain at the forefront of private investments because they respond to a dynamic of need and to a totally different way of living. As he states further down, *public projects often stand against the usual economic dictates that determine private investment (...)* which *betrays the proper comprehension of urban realities.* The private does not usually affect character, except when it comes to philanthropic actions, so called precisely because their motivation is outside the private economic interest.

As society became more complex during the twentieth century, public works were geared to urban efficiency rather than to splendor. Congestion, the plague and other urban problems of the 'old world' obliged the rebuilding of The Rocks and the docks, the tram system expanded to the suburbs and, after the delay imposed by the First World War, the construction of the City Railway and Harbor Bridge was undertaken.

At the same time, other areas of government took responsibility for the design of specific types of buildings, such as railway stations and social housing.



Epping to Chatswood Rail Line.
Construido por ACS, 2009

## Docks, Stations and Public Buildings





The Rocks

Campbells Storehouses, The Rocks

Local governments, particularly the city of Sydney, also began designing and constructing their own buildings, redesigning their plazas and consolidating their streets.

Although the Office of the Government Architect played a certain role in the beginnings of modern Sydney —in the design of the Central Station, for example— in the two decades between the wars its profile was reduced. However, its leading designer, architect Harry Rembert, foreshadowed the way forward during the 1930s, designing functionalist buildings in the Sydney and Newcastle technical schools and introducing modern design principles applicable to a wide range of purposes [47:12 and 13].

## Heritage in The Rocks

The Rocks is Sydney's oldest neighborhood where convicts and their families built their homes. According to the archaeological evidence hitherto known, the standard of living of the convicts here was higher than that of their counterparts in Great Britain and Ireland. The Rocks grew rapidly and in 1900 was an area crowded with low-skilled workers housing. In official reports, the area is often referred to as 'a dirty slum.'

Although most sites of ancient Aboriginal settlement have left no archaeological remains, in The Rocks there is evidence of a campsite with remains of fish and oysters dating back to around 1400.

In places such as The Rocks, there are obvious differences in character between organic construction in accordance with publicly respected patterns, and subsequent commercial developments in areas such as Darling Harbor, or some outlying areas of The Rocks themselves, threatened by the same economic interests. The resulting landscape breathes authenticity and allows us to glimpse how the city was when it struggled to overcome its foundational features, linked to the previous settlers, both Aborigines and convicts, without renouncing them but affirming its new character.




Campbells Storehouses, The Rocks



Sailors Home, The Rocks



The Rocks



Cadmans Cottage, The Rocks




The Rocks







Harbour View Hotel, The Rocks

The Rocks

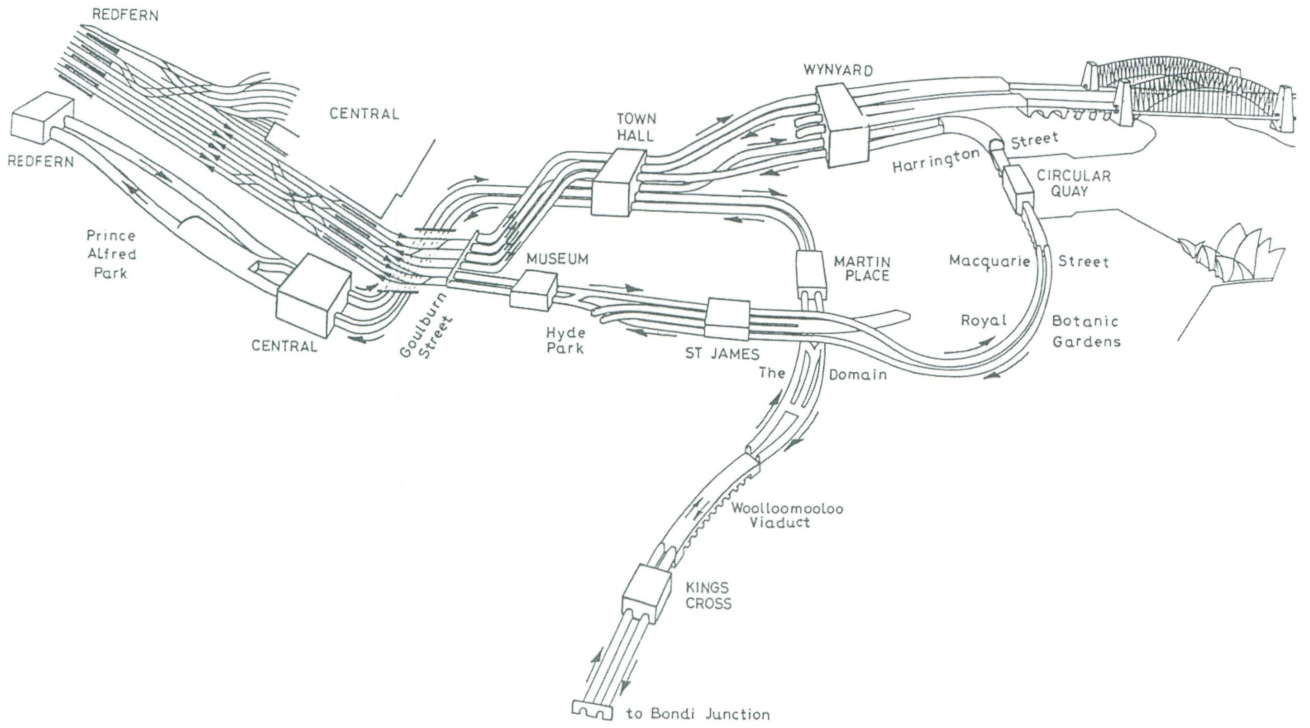
In The Rocks the memory of both has been respected, as points of departure of the city, versus the presence of Harbor Bridge and the Opera House as splendorous subsequent realities. The memory of the bubonic plague, which had one of its main focuses there and especially affected the convicts due to their poor living conditions, contrasts with the view of the Queen Mary II or the Queen Elizabeth moored in the no less glittering Circular Quay. And that contrast marks the scale of the time elapsed between both events and shows the spirit of overcoming manifested in the transformations suffered by the neighborhood.

During the following decades, the city was aware of the number and magnitude of the problems to be solved, assuming a determined commitment to the planned construction of the city, with an unprecedented consideration of the future.

## Commission for the Improvement of Sydney

The improvement of public spaces demanded a long process of analysis of the alternatives and decision making, which revealed the high technological level of architects and engineers, and the respect and consideration given by politicians to their opinions and proposals. As a token of this, a brief examination of the journals of the Commissions in charge of planning Public Works and Transport in order to achieve an acceptable mobility for a growing population is sufficient. All this, we must take into account, took place during a pre-war period with increasing scarcity of raw materials, rising prices and budget deficits, which would delay the implementation of decisions well into the 1920s.

The report of *The Royal Commission for the Improvement of the City of Sydney and its Suburbs* of 1909 (already mentioned in Chapter 3) pertained to the entire metropolitan area, with a series of proposals with a strong public component, submitted by various technicians and urban planners, such as architects John Sulman and John B. Barlow, engineer Norman Selfe or social reformer John Fitzgerald. The recommendations included projects already underway, such as the construction of the new Hickson




Metro tunnels network [23:91]

Road ring road, some streets such as High Street, docks, port sheds, warehouses, housing and other public facilities. Several urban proposals were also discussed, such as the extension of Martin Place.

The urban form of the two ends of the city was the subject of a discussion between Selfe and Sulman. In Circular Quay it was necessary to choose between a railway station on a viaduct or buried underground in a tunnel. Selfe supported a viaduct scheme to create a new façade of the city; Sulman called for the underground solution in order to create a large urban square over the water, which required a larger expenditure. The more pragmatic approach of Selfe [58:46] was recommended, not so much for reasons of cost, but of functionality.

In fact, the issue of the Circular Quay station had been the subject of several hearings before the Commission from various persons in charge of municipal areas, such as roads and communications and vehicles and services. The station was the key link of the entire public transport system of the city, where roads and roads converged with cars, buses, trams, trains and ferries. And all this, as is obvious in a city like Sydney, took place on the shore of Sydney Cove, the cove with the highest historical resonances and most emblematic of Sydney Harbor.

## Keys of the Public Transit

What the Commission had to decide was the future of the entire transport system in the Sydney-Bay area, including the following key issues: the future bridge to link its north-south shores, the link of Circular Quay with Central Station, the definitive layout of the commuter railway, the acceptance or rejection of the tram and the recent option of the private car, and the solution for goods transportation, including the loading and unloading on the ships, their route to cross the city and their connection with the railway system. The Journal of Sessions of the Commission provides an extensive and in-depth review of the knowledge of urban planning and transportation of these professionals —who knew well their job— by conscientious

commissioners, who aspired to propose the most correct decision for each of the problems under discussion.[34]

## Electric Traction

One of the issues underlying all this was the question of electric traction for urban transport vehicles, which greatly affected all other decisions. The appearance of William Hutchinson, *Chief Engineer for Railway and Tramway Construction*, before the Commission constituted its peak moment, as it provided the technical basis for the possible construction of the underground subway. The city did not like the hassle of trams on the surface, but the fumes of the coal used by steam traction complicated the use of tunnels.

Electric power favored trams and, at the same time, allowed the expansion of the underground subway, which was the solution of choice in London, Paris, Madrid, New York and almost all the major cities in the world. In Berlin, on the other hand, the elevated trains were chosen for the metropolitan connections, but accompanied by an underground commuter train at a shallow depth on account of geotechnical difficulties.

Hutchinson expounds the need to complete the layout of the commuter railway, to connect it with the commuter railway at Elizabeth Street station, and with the north bank above the future Sydney Harbor Bridge, providing all sorts of details about the slopes and maximum radios of curvature, of 3 percent and 10 'chains,' before tackling the specific question of the tunnel versus viaduct for Circular Quay station. The President of the Commission is interested in the possible obstruction of a subway line over viaduct in the traffic of the city, in his question number 120:

*- Do you not think such a viaduct would be an impediment to traffic?*

*- Yes –Hutchinson replies— a considerable impediment.*




Epping to Chatswood Rail Line 14. Built by ACS, 2009



## Traffic and Access to the Suburbs

After multiple questions from other commissioners about layout, cost, proximity to the offices, coexistence of traffic at the same level, references to electric traction in California and Boston, the session journal continues with the appearance of John Kneeshaw, *Tramway Traffic Superintendent*, who points out that overpasses are noisy and interfere with street traffic. Then comes William M. Gordon, City Surveyor of Sydney, who is asked about Darling Harbor's goods transportation through the city, and later about for the annoying condition of the pedestrian station, in question 604 by James Graham:

*- Do you not think that the present condition of Circular Quay is most alarming from a pedestrian point of view?*

*- It is a terrible place –Gordon replies.*

The Commission continues with its meetings and on June 29, 1908, John Harper, Chief Traffic Manager, New South Wales Government Railways, appears to address metropolitan issues. Harper says that the growth of traffic is unstoppable and independent of economic fluctuations, and that it is imperative to extend the railroad to the eastern suburbs. Addressing Sulman's questions, Harper explains that the railway would reach stations located in the center of the respective suburbs, served in turn by tram lines. The President of the Commission asks, in clear anticipation of the currently generalized commuter tickets (No. 686).

*- Would you propose, with such a system, to issue season tickets for the tramways in conjunction with the railway?*

*- Probably that would be done –Harper replies.*






Chinatown

Alamein Fountain, Potts Point



Cascade Street, Paddington



*- So that a person leaving town could take a ticket for the through journey?*

*- Yes –is Harper's laconic and clear-cut answer.*

## Vital Ramifications for the City

The depth of the questions and answers on topics as varied as these encompasses not only issues specific to public transport, but also the complex ramifications of their full integration into the life of the city. The Commission and the attending technicians are well aware of the problems and their possible solutions, demonstrating that they are up to date on what was being done around the world in similar cases.

At the still unfinished Central Railway Station, Sulman proposed to turn Belmore Park into a circular park surrounded by a two-tiered road and a multi-storey building with a continuous arcade, in a giant version of Bath's Royal Circus. This would resolve the disjunction of the station concourse and the surrounding streets on different levels. Selfe proposed lifting the streets and the park up to the concourse level. The Royal Commission also recommended the completion of the City Circle railway line, confirmed the placement of its stations, and proposed to use the fill from its excavation to continue to infill the southern end of Darling Harbor [58:46].





Oxford Street, Paddington

## Preserving Beauty

Throughout the sessions, concern is expressed about the aesthetic result of the proposed Public Works: just see question 184, by Selfe, regarding the station:

> *- In regard to the appearance of the city from an aesthetical point of view, do you not think that viaducts would be a great disfigurement?*
>
> *- I do not think the viaduct crossing at the Central Railway Station is any disfigurement to the city.*
>
> *- But that is of stone. The viaducts through the streets would be altogether different from that?*
>
> *- Yes, but they could not be altogether avoided. For instance, there would be a long viaduct coming down from the North Shore Bridge.*

As we can see, the architect goes into the details of forms and materials, anticipating, as early as 1908, that the viaducts will cease to be built with stone or brickwork. For his part, the engineer points out that the possible viaduct of access to Harbor Bridge, despite the fact that the final project was still unknown, cannot be made of stone, but of metal.




Oxford Street, Paddington




Royal Hotel, 1888, Five Ways, Paddington



Glebe Town Hall, Glebe






Oxford Street, Darlinghurst







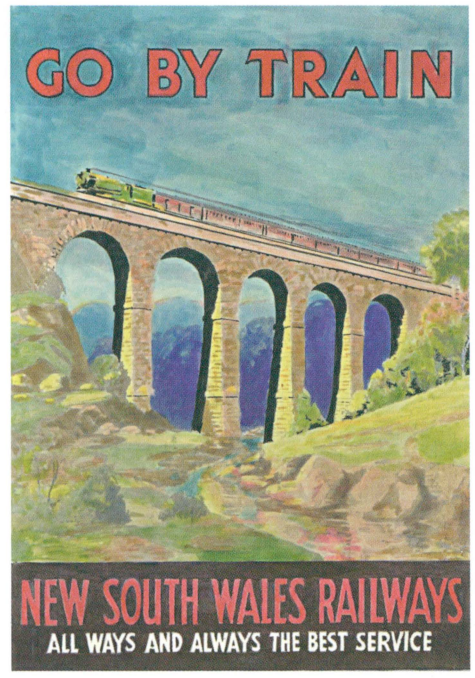
Glebe Street, Glebe

Post Office, Darlinghurst




Paddington

Oxford Street, Darlinghurst







*Go by train. All ways and always the best service,* poster. New South Wales Railways, 1936-1938. Courtesy of Australian Railway Historical Society, Railway Resource Centre, 523582

*Delightful views from the carriage windows: New South Wales Railways. All ways and always the best service.* Frederick Henry Gladstone Longstaff & NSW. Department of Railways, 1940. Colourtone Ltd, Sydney. Courtesy of National Library of Australia, nla.obj-138343958

## Electric Railroad Network, 1916

In 1910, the choice of the commuter system was a hot topic. There had been much talk about the convenience of the subway or electric trams in the hearings of the Improvement Commission. But the issue had matured and the options were clear: in 1916 a 'Report on the proposals for electric railroads for the city of Sydney,' signed by J. C. Bradfield, M. E., M. Inst. C. E. (Master of Engineering, Member of Institution of Civil Engineers) came out. The report was very broad and, despite the concise title, it covered extensively the subject of Public Transport in Sydney [8].[35]

The electrification of commuter railways to Parramatta, Hornsby, Sutherland, and Bankstown was recommended; as well as the construction of the City Electric Railway, and of electric railways to the eastern, western and northern suburbs of Sydney. It also recommended the construction of two bridges over the harbor, one about 488 m (1600 ft), the span of the later Harbor Bridge, and another one, somewhat smaller, 411 m (1350 ft), the electrification of commuter railways to four other suburbs — Penrith, Campbelltown, Waterfall and the Hawkesbury River— and the construction of 'underground trams' worth about 20 million pounds.

The report is rather lengthy and makes general recommendations, but it also goes into specific details based on what was observed in New York and London. The conclusions of each of its 25 sections consist of rules of good practice. For example, section 6, dedicated to crossings, ends up recommending the suppression of all level crossings, whereas the section dedicated to stations requires a double platform at end of line stations, for travelers to enter and exit through separate gates. But it mixes general rules, typical of a manual, with detailed descriptions of the models of excavating machines, although it does not fail to include specific plans for the location of networks and stations.

Paragraph 21 clearly establishes priorities for action, before assessing the cost of the entire plan. The highest priority is to electrify existing railways, secondly to







Cronulla Rail Station

maximize the use of existing materials, and thirdly to correct the gauges to keep the minimum set for the entire network. Later, it will be possible to buy new trains and, finally, to build the City Railway and electric railroads to the suburbs of the east, west and north.

## Location of the Stations

According to the report, the stations of the first Metro lines should be placed under very wide squares or streets, to allow their open-air construction, but the reflection on the Central Station is treated in different way. The report emphasizes the historical account, and includes the decisions of the successive commissions, one after another.

Discussing the stations, Bradfield takes into consideration less technical issues and the report acquires a different tone, since these are key parts of the city which, in turn, are related to the selection of the main lines, their connections and their stops. In principle, it was intended to occupy a more central location, but the public's refusal to yield a single span of Hyde Park land for the Metro or the railroad led to its displacement to the south, generating the need for two stations between Central Station and Circular Quay [8].

## The Tyranny of Level

Equally interesting is the question of the level of the tracks in Central Station, originally intended for the line to reach Circular Quay as an underground section. Since it was decided that it would pass by Circular Quay in a viaduct, the central station had to rise a few meters, as was finally done. But it took a little longer to make the decision because the possibility of leveling The Rocks, so that the railway would have a longer route and could reach the Harbor Bridge more smoothly, was under consideration.

The link between the bridge and the two stations became evident with the low ductility of the railroad with respect to the slopes. Any decision on the quota of one of the three key pieces of Sydney's mobility had immediate repercussions on the other two, forcing decisions to be delayed until a general plan of the system was reached.



Light Rail- T4 Eastern Suburbs and Illawarra Line at the crossing with the Eastern Distributor, from Sydney Tower

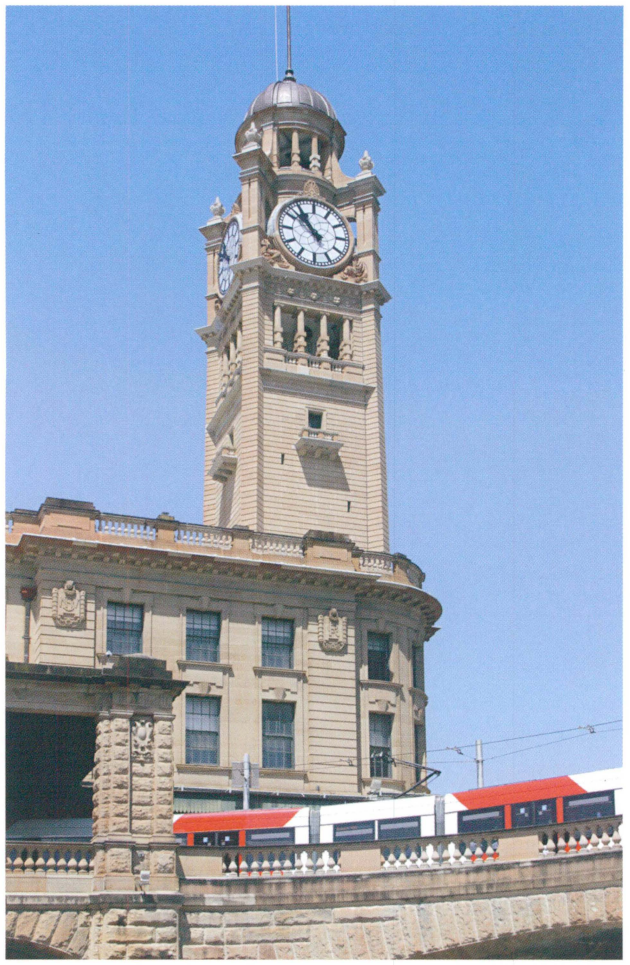
## From Tram to Light Rail, 1997

The trams left the city when the Metro began to operate, but the railways re-occupied the streets in the late 1990s. It was first a monorail connecting Darling Harbor with the CBD which entered into service in 1988, after the renovation works of the urban areas of Darling Harbor and Pyrmont in the 1980s and 1990s.

The scarce integration of the monorail with the other means of transport, coupled with the progressive remodeling of the Pyrmont peninsula, which included the city's first legal casino, boosted the idea of using a disused section of a metropolitan freight rail for a light rail. A stretch of railroad between Pyrmont and Haymarket was upgraded and another new section was built at the center of the street to link the line to Central Station. The action was carried out with public-private financing in partnership with the Spanish company Acciona and was inaugurated in August 1997 under the name of Sydney Light Rail.

The new line is about 13 km long and has 23 stations, but there is a second line under construction from Circular Quay on the east side of the CBD to Central Station, and two more lines are planned to cover western Sydney, reaching as far as Parramatta. In principle, the incorporation of this new mode of transport into the integrated system of NSW aims to replace the many buses that now cover the service in the east, serving the Sydney Football Stadium and Sydney Cricket Ground, the Randwick Racecourse and the University of New South Wales.

The light rail system has great potential and there are several areas under study for its possible implementation. According to its feasibility, in several of these areas the new Light Rail would use corridors designed for the old trams, such as as in the Anzac Parade, a wide landscaped north-south avenue which practically reaches Botany Bay passing quite close to the Beach of Maroubra.





Light Rail en Central Station (1997)

The Star Light Rail Station (1997)



Light Rail (1997)




System of parks

1. Taronga Zoo
2. Cremorne Reserve
3. Dawes Point Park
4. Observatory Hill Park
5. Botanic Gardens
6. Domain Park
7. Hyde Park
8. Cook and Phillip Park
9. Chinese Garden
10. Wentworth Park
11. Belmore Park
12. Paddington Reservoir Gardens
13. Prince Alfred Park
14. Moore Pack
15. Queen's Park
16. Centennial Park

## City Center Parks

The construction of the major subway and rail stations brought about some opportunities for the development of public space, such as Wynyard Square bordered by the streets of York, Carrington, Barrack, Wynyard and Margaret. The idea of creating a square with a park was an old one, and from the 1850s the layout of the surrounding streets allowed an English-type park surrounded by an iron fence, flanked by large residential houses of four and five floors. Around the turn of the century, the houses began to be replaced by offices, department stores and commercial buildings, increasing the height built around the square and altering its residential character.

## Modernism in Hyde Park

In the 1920s the construction of Wynyard Station and the City Circle Railway destroyed the Victorian era park and forcefully introduced the modern infrastructure of the city. Underneath the broadened York Street, the multi-level station and its access were dug, but the main entrance of the station, with its wooden escalators to the esplanade, was housed inside the new Railway House, 45 m high and with a green ceramic façade, designed by the architects Budden and Mackey and completed in 1936. The building reached the height limit then allowed in the city, and encouraged the mergers of plots and the construction of new commercial buildings, finally surrounding the park.

Under the plaza, Bradfield's new underground railway and tram station took on the role of an intermediate stop in the center of the city. After World War II, new excavations were carried out under the park, with a glass dome covering the lobby of the station and connecting it with George St and beyond, through an extensive pedestrian underground network beneath the buildings. For Thalis and Cantrill, *such strategies, in vogue in this era, aimed to create a multilevel city and to separate pedestrians from cars* [58: 96]. However, the network multiplies and diversifies accesses to the station, following the New York guidelines, so different from the European ones, and leaves the surface of the square for pedestrians and entrances to hotels and buildings, with a major bus terminal at Carrington Street with lines to the north side of the port.

Among the areas remodeled as city center parks we must include Hyde Park itself, which went from grassland and commemorative area to become a park of 16 ha. open to the public. According to the recommendations of the *Royal Commission for the Improvement of the City of Sydney and Its Suburbs* of 1909, the streets bordering the park were widened, losing some of the original surface and some of the perimeter landscaping.




Park Street








Hyde Park

The major changes were due to the construction of the City Circle railway tunnel in 1928. Its trench construction, including the Museum and St James stations, led to the removal of many trees from the first plantings. The competition for its reform was won in 1929 by engineer Norman Weekes, with a proposal that followed the principles of the period of the City Beautiful movement, introducing constructive elements to beautify the park, such as sandstone walls, flights of stairs, lampposts and fountains. Instead of the classic ornamental flower beds, he defended the need for large sunny meadows, beneficial for health and recreation. He proposed to accompany these prairies with large arboreal specimens of Australian native species[36] flanking the longitudinal axis. The successive later modifications of the park gradually introduced traditional plants and ornamental shrubs and other foreign species such as palm trees.

His proposal deepened the division of the park, with a large central avenue planted with double rows of Ficus and a greater formalization of separate areas in the two halves of the park, on both sides of Park St [58: 138]. The north space was centered in a circular square where several radial rides go around the Archibald Fountain, designed by French sculptor François Sicard in 1932, to commemorate the alliance with France in the First World War. The hexagonal plant fountain is presided over by a bronze sculpture of Apollo surrounded by other mythical figures with multiple jets.

Hyde Park from Sydney Tower



## Anzac Memorial

To the south was placed the Anzac Memorial and its Pool of Remembrance, in a rectangular shape, that was the object of a design contest in 1929, won by architect Charles Bruce Dellit in collaboration with sculptor George Rayner Hoff. The proposal consisted of a staggered shrine with double symmetry, topped by a dome decorated with 120,000 stars inside, one for each Australian who participated in the war. The monument is designed in a decorative modernism, or art deco style, treated like a rather ornamented large sculpture, and it houses the headquarters of several organizations of veteran soldiers.[37]

The Anzac Memorial of 1930 commemorates the role of the armed forces in the world's major conflicts and, specifically, the date of April 25, the annual day of Anzac (Australian and New Zealand Army Corps), corresponding to the landing

of Australian soldiers in Gallipoli, Turkey, as part of the World War I campaign. In Hyde Park mourning is combined with national pride as it is popularly seen as the moment when Australian national identity took shape. Lately, Gallipoli has become a destination chosen by young Australian backpackers as they travel throughout Europe.

## Sandringham and Nagoya Gardens

In the south-east corner Sandringham Garden stands out, designed by the first qualified landscaper in Australia, Ilmar Berzins, and inaugurated in 1954 by Queen Elizabeth II, on the place formerly occupied by a music kiosk. These gardens, along with the Memorial Gates, are examples of the fervor for English royalty of the 1950s, and commemorate the deaths of King George V and George VI. Its recessed center is occupied by a circular fountain surrounded by a meadow and embraced by two pergolas covered with wisteria, located on a higher level to which one can ascend by means of circular stairs. The mosaic of the central fountain with jets is the first example of the use of Aboriginal motifs in the urban design of the country, and the whole is surrounded by geometric flower beds.

On the south-west corner of Hyde Park North is Nagoya Garden (1983), with a giant chess set (1972) next to the entrance of St. James Railway Station (1934). The other station, Museum Station (1934), is located on the southwest corner of Hyde Park South. The two Metro stations located at the corners do not disturb the park and are of very different styles: Museum is a Parisian-style vault, whereas St James shows an deliberately open metallic structure with arched dividing walls.




St. James Station, Hyde Park

Archibald Fountain, Hyde Park



Archibald Fountain[38] is a public work that celebrates the virility of the construction of the empire and the imposition of order upon Earth. However, according to Susan King, Archibald Fountain *creates a sense of intimacy in the centre of a public place. The naked figure of Apollo, his bronze flesh gleaming with water, introduces into the city a masculinity which is sensuous, playful, even vulnerable: no wonder perhaps that in the 1950s and 60s, the fountain became a homosexual beat.* Later it went through years of abandonment and deterioration, perhaps because its pagan figures were not much to the official taste [41:108].

## Contrasts of Character

In summation, according to Thalis and Cantrill, *Hyde Park is Sydney's outstanding urban park, a classic of its type, comparable to the Jardin des Tuileries in Paris. The twin memorials - fountain and monument, exuberant and solemn - form an extraordinary dialectic, both spatial and symbolic. The park continues to amass monuments and host innumerable entertainment and political events. Its grand trees, broad lawns, gardens, fountains and intimate corners provide daily enjoyment within the dense city* [58:138].

## Cook and Phillip Park

Northeast of Hyde Park and opposite St. Mary's Cathedral is Cook and Phillip Park, a remnant of the expansive public lands that originally covered the entire eastern side of the city, which was delimited and reserved for a future park during the nineteenth century. The heavily sloped plot is bordered on the north by the catholic cathedral of St. Mary and was separated from the Hyde Park plain to the west with the construction of College Street in 1832.

Formerly these lands were on the outskirts of the primitive city, and after the completion of the Hyde Park Barracks, they hosted starting in 1819 a walled garden for convicts



Cook & Phillip Park









Cook & Phillip Park

that included a shed for the gardener, but was abandoned in 1831 due to the poverty of its soil. In 1878 Boomerang Street was built as a diagonal route that allowed the trams, installed in 1894, to overcome the slope of the step and connect the center with Woolloomooloo, Garden Island and the eastern suburbs. This first route divided the plot into two triangular zones, which were later converted into two parks: Phillip Park in the northeast in honor of the first governor, Captain Arthur Phillip, and Cook Park in the southwest, in memory of the British explorer Captain James Cook.

Throughout the twentieth century, the gardens remained in a more or less neglected state, successively affected by the reforms of the steps of the cathedral. But in 1994 the Sydney City Council published a landscape proposal for the area, written by Richard Francis-Jones and Oi Choong, which closed the streets and assembled the triangular sections of the parks with a large terrace aligned with the front elevation of the cathedral. Building on that idea, the City Council commissioned a more ambitious proposal for those 'forgotten parks' to landscape architects Lawrence Nield and Partners and Spackman Mossop.

The terrace was *dramatically* enlarged to shelter underneath it a swimming pool, a gym, a restaurant and a public car park. This generated a great public debate on the incongruence of uses between the swimming pool and the cathedral, which was considered somewhat disrespectful. But the big problem of design was the lack of relationship between the large paved terrace along College St, the enlarged park, the public uses and the realigned streets. The set combined the powerful façade of the cathedral with the fine elevation of the Australian Museum and was softened with the introduction of large pools and several fountains on the terrace, plus an articulated southward boundary at William St, the extension of Park St [58:144].

The current College Street pools, called 'pools of reflection,' reduce the loads of the possible use on the terrace of the pools below. This water center takes full advantage of natural light and is decorated with sport motifs: eight large panels by artist Wendi Sharpe relating the life of Australian actress and swimming champion Annette Kellermann (1886-1975). The Yurong Water Garden, designed by Anita Glesta, recreates the Yurong Creek stream, which ran along the edge of Cook and Phillip Park to Woolloomooloo Bay, with a strong presence of sandstone rocks.

## Prince Alfred Park

Prince Alfred Park is a 7.5-acre park in Surry Hills, south of Central Station. Before the settlers arrived, this terrain contained a tributary of Blackwattle Creek and was called the Cleveland Paddocks after the nearby Cleveland House (1820), still preserved on the corner of Bedford and Buckingham St. Part of the land was excised for the construction of the train which demarcates its west boundary (1850-1855) and Cleveland Street Public School (1856). The remaining land was constituted as a public reserve in 1865 and three years later it was given the name of Prince Alfred Park, in honor of the second son of Queen Victoria during his visit to the city.

In 1869 it hosted the first Agricultural Society fair and the following year the first major exhibition held in Australia, the Intercolonial Australian Exhibition, to commemorate the centenary of Captain Cook's arrival in Botany Bay, predecessor to the first International Exhibition in the Garden Palace in The Domain (1879).[39] Architect Benjamin Backhouse was in charge of the design and made an innovative proposal for the end of the nineteenth century, according to the tendencies of the gardens of the universal exhibitions, mainly the one in Paris of 1867. Later, it hosted numerous agricultural fairs and other monuments like the War Memorial Museum from 1925 to 1936, which was later moved to Canberra, and was finally demolished in 1954.

## Sport Grounds and Facilities

Following American trends, during the first half of the twentieth century sport grounds and facilities were added to parks, as Robert Moses advocated in New York, changing their initial contemplative character to more physical exercise and play activities. In Alfred Park, tennis courts and a playground were built, later replaced by the Coronation Playground (1939) to commemorate the coronation of King George VI. In 1954 the pool was built and five years later an ice skating rink, demolished in 1997, was added.[40]

Recently, the team formed by Sue Barnsley Design, Neeson Murcutt Architects and the City of Sydney have redesigned this park, which includes the first heated outdoor swimming pool in the area, Prince Alfred Park Public Pool, inaugurated in 2013 and recipient of many awards.[41] The new project reinterprets in a poetic way the great parks of Sydney of the nineteenth century, recovering its memory and giving a nod to the history of the place. It has a green cover, an energy efficiency system and another for filtration, collection, storage and reuse of rainwater. The reform includes hundreds of new tropical species and succulent plants, but it still preserves large specimens of Moreton Bay figs (Ficus macrophylla) from the 1870 project on the edges of the park, and palm trees (Washingtonia robusta and Phoenix canariensis) from the inter-war period in the inside.[42]






Allianz Stadium

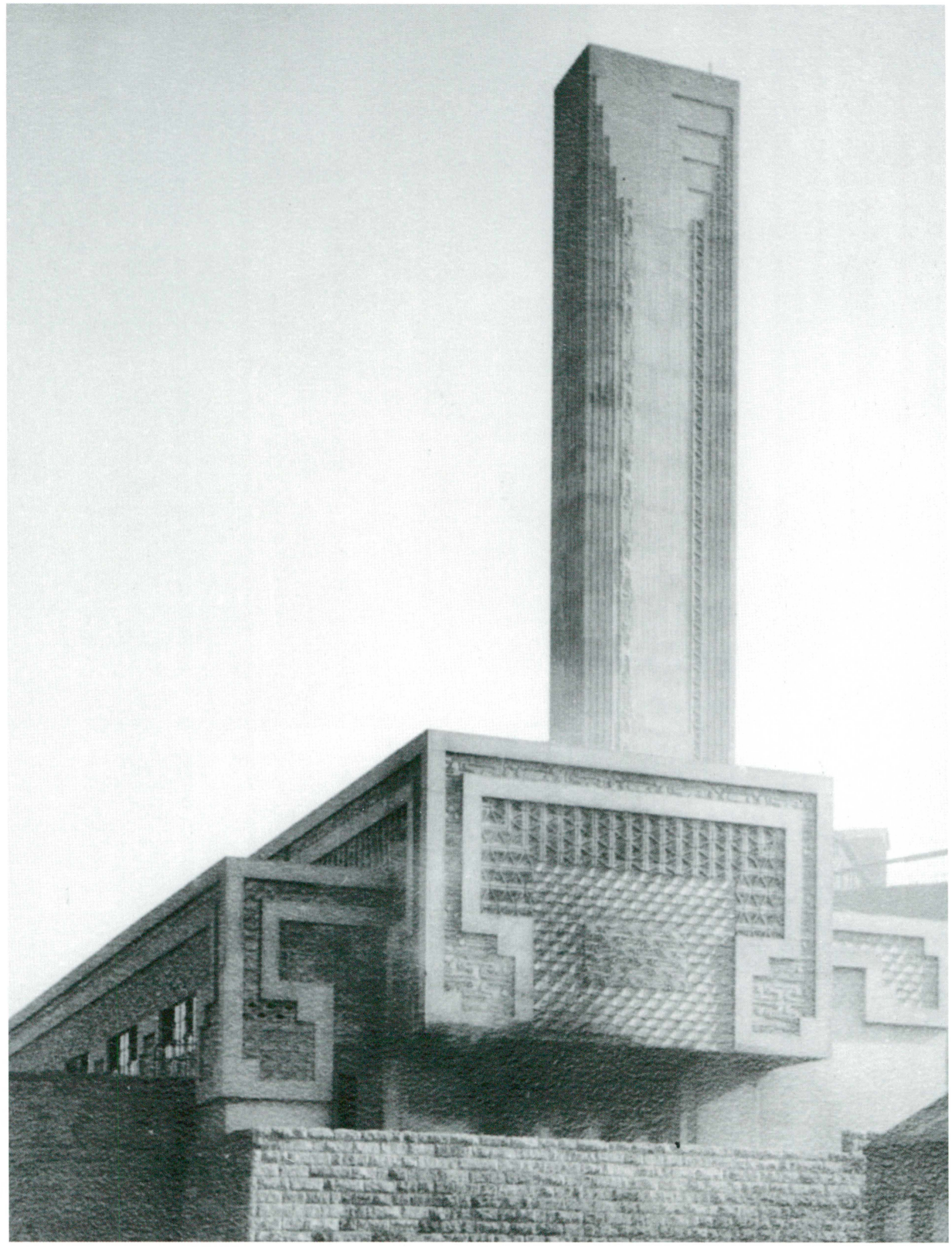
## Expressionism - Art Deco



Wychbury, 5 Manning St - Potts Point



Grace Hotel - King Street

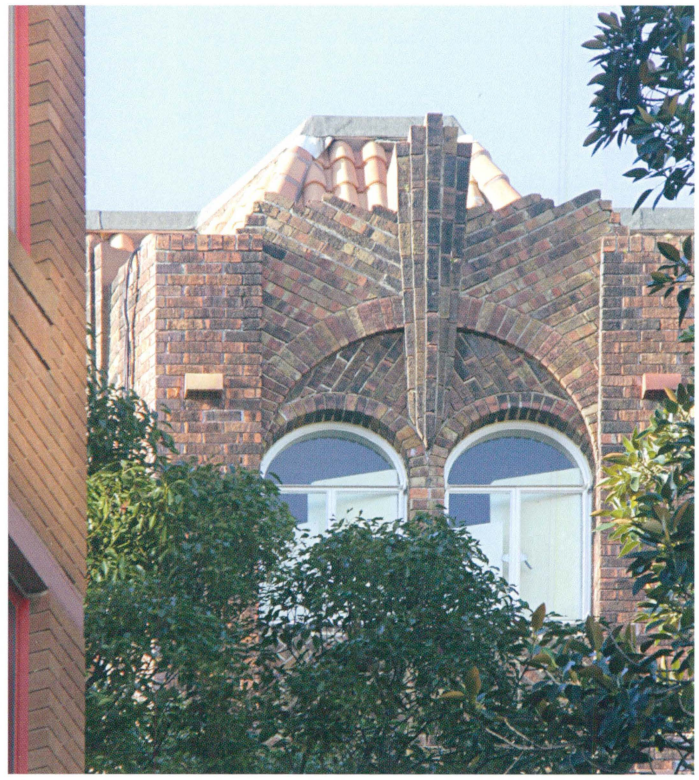


Exterior view of Pyrmont Incinerator from south-west, Sydney. Walter Burley Griffin & Eric M. Nicholls, 1935. Courtesy of National Library of Australia, nla.obj-150422021

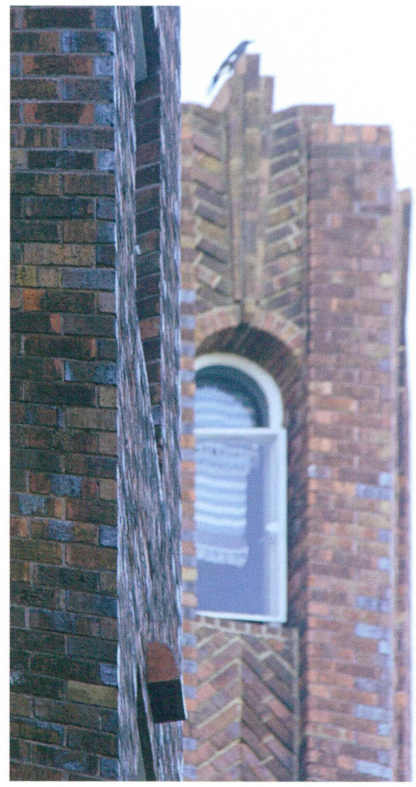
Of the same period and of great modernist significance is the demolished Pyrmont Incinerator, constructed by Walter Burley & Marion Griffin in 1937 and maintained in operation until his demolition in 1971 to construct apartments. It was located in an industrial zone and both the choice of the site where it was to be located and its acceptance by the public or its demolition process, finally carried out in 1991, were long and conflicting [26:54].



Winston Buildings - Ithaca Road



Elisabeth Bay Road / Greenknowe Av






Parramatta Book Store-333, Church St



Edgewater Bd., 6 Billyard Av, 1936

## More Water for the City

**Launch of the Upper Nepean**

The vision of the city as a large territory was also established as a vision of the resources needed to provide for it. The already mentioned Upper Nepean Scheme, approved in 1880, was completed starting in 1907, extending until 1935, with the construction of the four main dams: Cataract, Cordeaux, Avon and Nepean, all of similar construction, but with different shades of style and finish. With this scheme, the water of the Cataract River stored in Broughton Pass was led to the deposit of Crown Street, at 100 ms of distance. Subsequently, the plan was expanded to include the Warragamba and Woronora dams.

**Delays and Eventualities**

Until the new dams came into service, the Upper Nepean Scheme was not immune to the effects of drought, as occurred in the severe drought from 1899 to 1903, when the water level in the Prospect Reservoir became extremely low. Once again an emergency plan was instigated. A pump station, consisting of nine pumps powered by steam engines, was built next to the outlet basin to lift water from the tank to a flow channel on the roof of the station. The flow was discharged into the Lower Canal, adjacent to the outlet basin.

Another contingency work was the construction of a steam-powered power station at the Menangle railway station to power an isolated pumping station on the nearby Nepean Gorge, thus raising the water from the Nepean River to the Upper Canal. A third proposal consisted of a pumping station on the same river near Penrith, driven by newly developed Parsons steam turbines. Two of them were imported by the Board in 1903, the year of the beginning of the drought, but did not enter into service until 1908, when they were installed at the Ryde pumping station [23:23].

**Four Dams by the Administration**

The severity of the drought had shown the urban population what had long been experienced by the country people, that is, the irregularity of rainfall in Australia. On that basis and in order to mitigate the effects of future droughts, a long-term plan was made to build four large storage dams on the tributaries of Upper Nepean. The plan was subsequently expanded to include the Woronora and Warragamba dams.

Cordeaux Dam



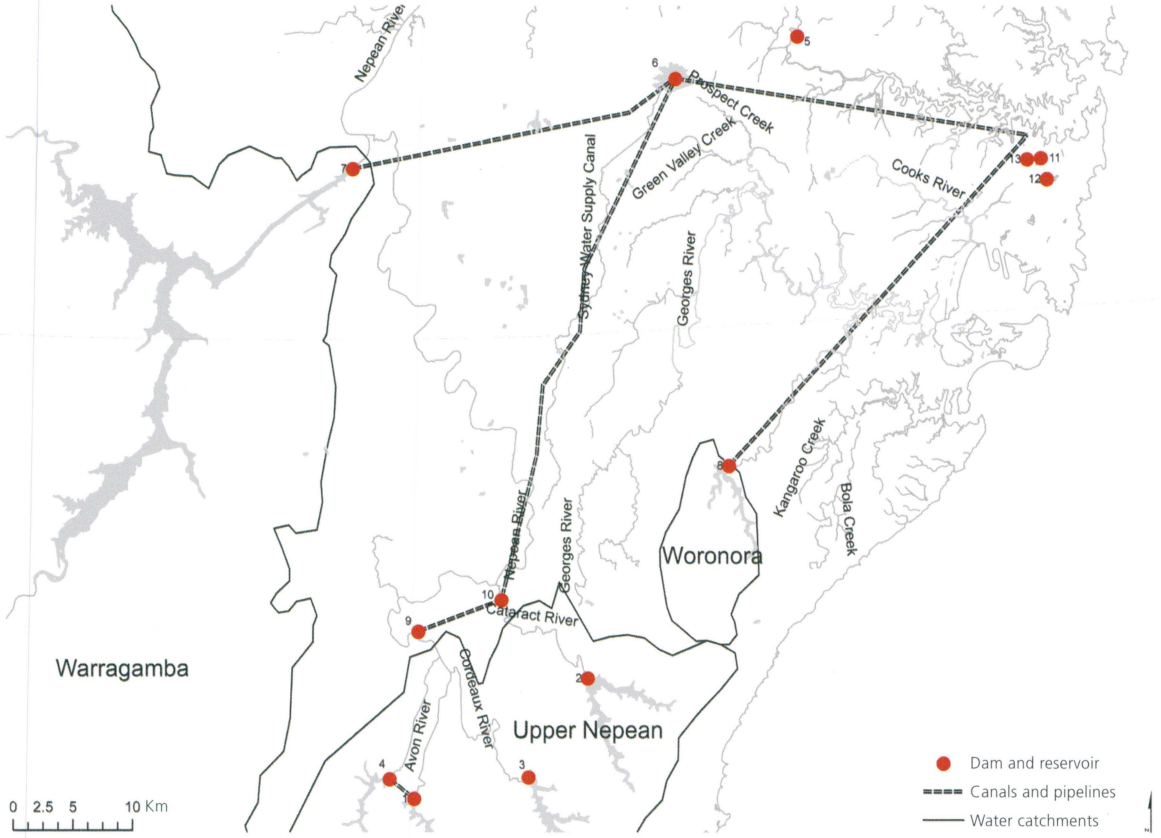



Diagram of the Sydney supply dams

1. Avon Dam
2. Cataract Dam
3. Cordeaux Dam
4. Nepean Dam
5. Parramatta Dam
6. Prospect Dam
7. Warragamba Dam
8. Woronora Dam
9. Pheasants Nest Weir
10. Broughtons Pass Weir
11. Paddington Reservoir
12. Lachan Swamps
13. Crown St Reservoir

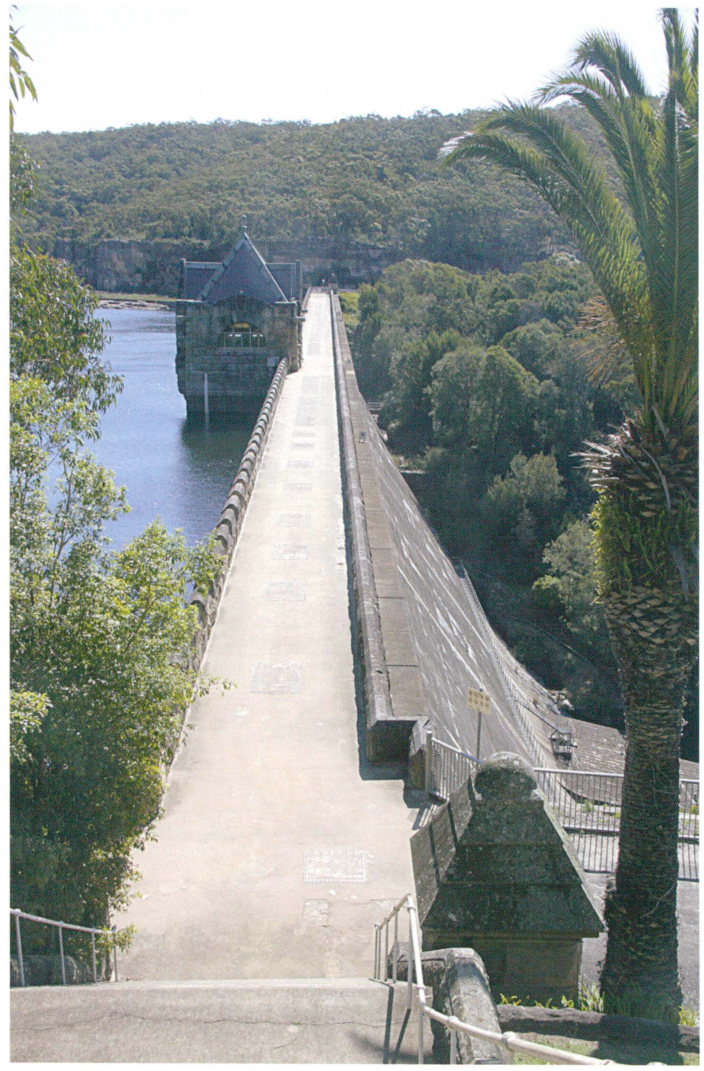
In 1903, the Public Works Department (PWD) began construction of the Cataract Dam, the first of the storage dams. As in almost all the major constructions carried out until then, the work was done by hired labor, the contractors being Messer Lane & Peters. The following five large dams of the Sydney supply system: Cordeaux, Avon, Nepean, Woronora and Warragamba, were built by the government; Cordeaux and Avon completely by the PWD; Nepean was initiated by the PWD and completed by the Water Board; Woronora and Warragamba by the Water Board [23:24].

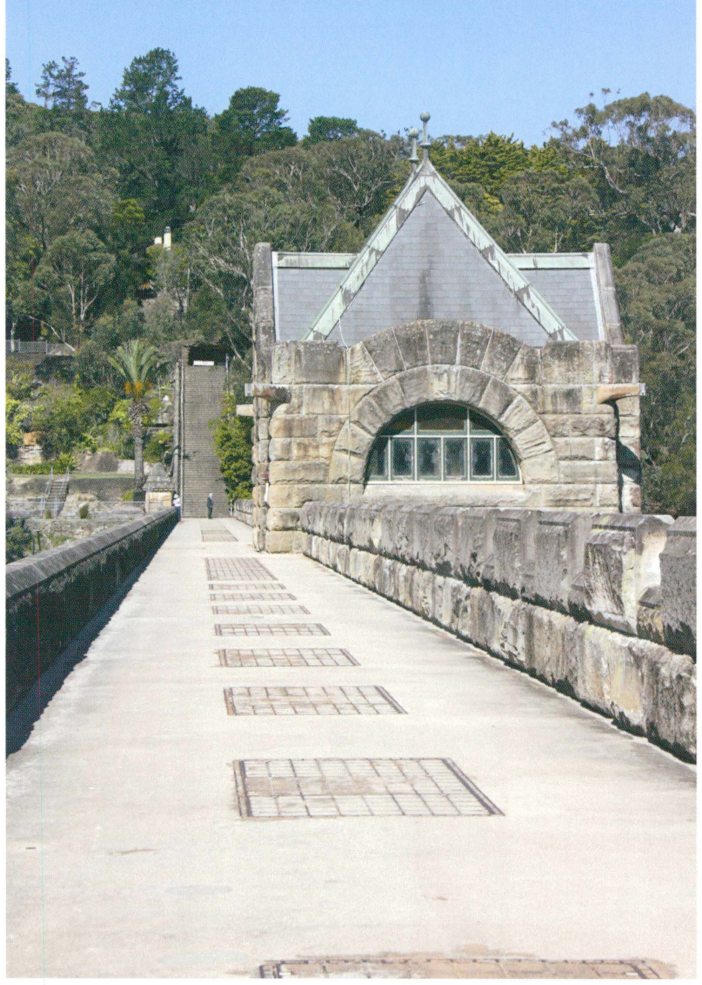
## Innovations in Dam Building

When the first Cataract Dam was approached, the construction of dams had just entered a key moment of its technological development. Since 1850, several factors converged: knowledge of the behavior of materials was combined with the development of methods of calculation based on the new possibilities offered by mathematics, and all this was driven by the increasing water requirements demanded by the excessive growth of the population in the cities. In the field of gravity dams, advances were made in determining the most advantageous theoretical profile by J. Augustin de Sazilly in 1850.

But the first practical realization came by the hand of Émile Delocre, who built the Gouffre d'Enfer dam between 1859 and 1866, 60 m high, back then an absolute height record. It was a masonry dam with slightly concave faces on both sides and slightly curved plan. Then came the El Villar dam, designed in 1869 and finished in 1882, with a slightly arched plan and whose section already responded to the rational profile, intended for the supply of Madrid [1:184].









Cataract Dam, 1907

## The Picturesque Cataract Dam, 1907

Cataract Dam, completed in 1907, is a gravity dam with 56 m height and 247 m crest in a straight line, producing a reservoir of 94.3 $Hm^3$ and 8.5 $km^2$ surface. Its spillway is located next to the crest and displays an arched overfall over the rocky mass of the left abutment. It was enlarged in 1915, after undergoing a first great flood in 1911.[43]

The dam fits into a dissymmetric funnel of the river, with the crenellated crest extended in degrees on the right abutment, somewhat superior to the left, and with the set presided over by the picturesque sluice gates booth located at the center. Built with large rusticated stoneblocks, its lateral elevations have large arched windows, topped with a second arch and prominent gargoyles in the four corners. The main façade has a large gate also arched, topped by a gable, and the whole building is covered with a slate roof, topped by a pair of spikes. The entrance gate and the long staircase, flanked by pairs of powerful cubes of rusticated stoneblocks, topped by pyramidal stone pinnacles with a semisphere at the apex, are built in a similar style.

## Electricity and Prefabs

Cataract Dam was the first major civil engineering project to use electricity for the placement of sandstone and concrete blocks. Electric power was supplied by a thermal power station built for this purpose upstream of the dam and fed with the wood cut under the maximum reservoir level. The logs cut were transported by means of a tram to the sawmill, where wood of commercial quality was also obtained for the work. Electricity was also used to illuminate the works at night with lamps suspended from the crane jibs, when it was necessary to make up for the delay caused by floods.

A practice introduced at Cataract Dam but not elsewhere was the lining of the upstream-facing wall of the dam with large concrete blocks. These were manufactured in a production line, pioneer of many other units of mass production of concrete elements.

Cataract Dam was built in Cyclopean masonry, with large blocks of sandstone embedded in a matrix of mortar and sandstone concrete and covered with concrete. The Cordeaux, Avon and Nepean dams were of similar construction, but the Woronora dam began in Cyclopean construction of sandstone and was finished in mass concrete. The Warragamba dam was constructed entirely in mass concrete of river gravel.

## Egypt in Cordeaux Dam, 1927

Cordeaux Dam was built twenty years after Cataract Dam and has a much less strict look. It is also a gravity dam, with an almost identical height of 57 m, and has a similar spillway system curved over the rocky massif adjacent to the left abutment. But its plan is curved and the crest is almost twice as long. In addition, it is decked out with two large porticos at the ends and two sluice gates booths towards the center, of a much more monumental character.

The coffers are of stone and solid aspect, finished off by a cornice and a flat eave, with a porched cover towards the crest. The abutments are more designed, with a lintel supported by two pairs of lotiform columns flanked by two pyramidal shaft



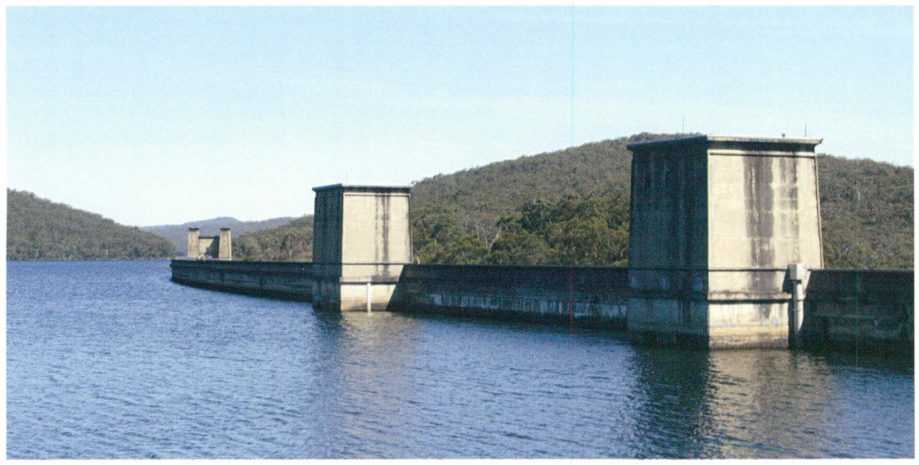
Cordeaux Dam, 1927

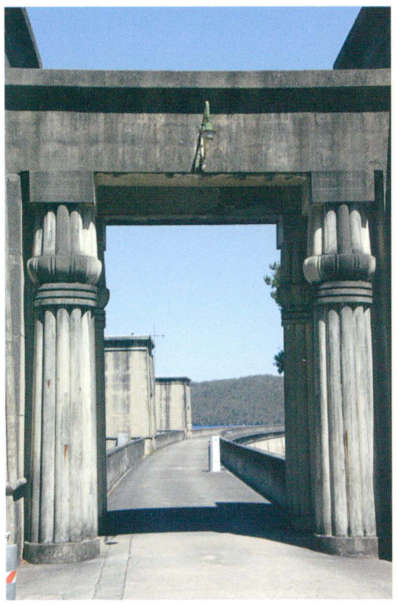
## Arcades of Lotiform Columns

pylons, all of Egyptian inspiration. The shafts and capitals of the columns of the right abutment are very well finished and manage to disturb the expected sense of rurality associated with a great public work lost among mountains densely covered by intensely eucalyptus trees.

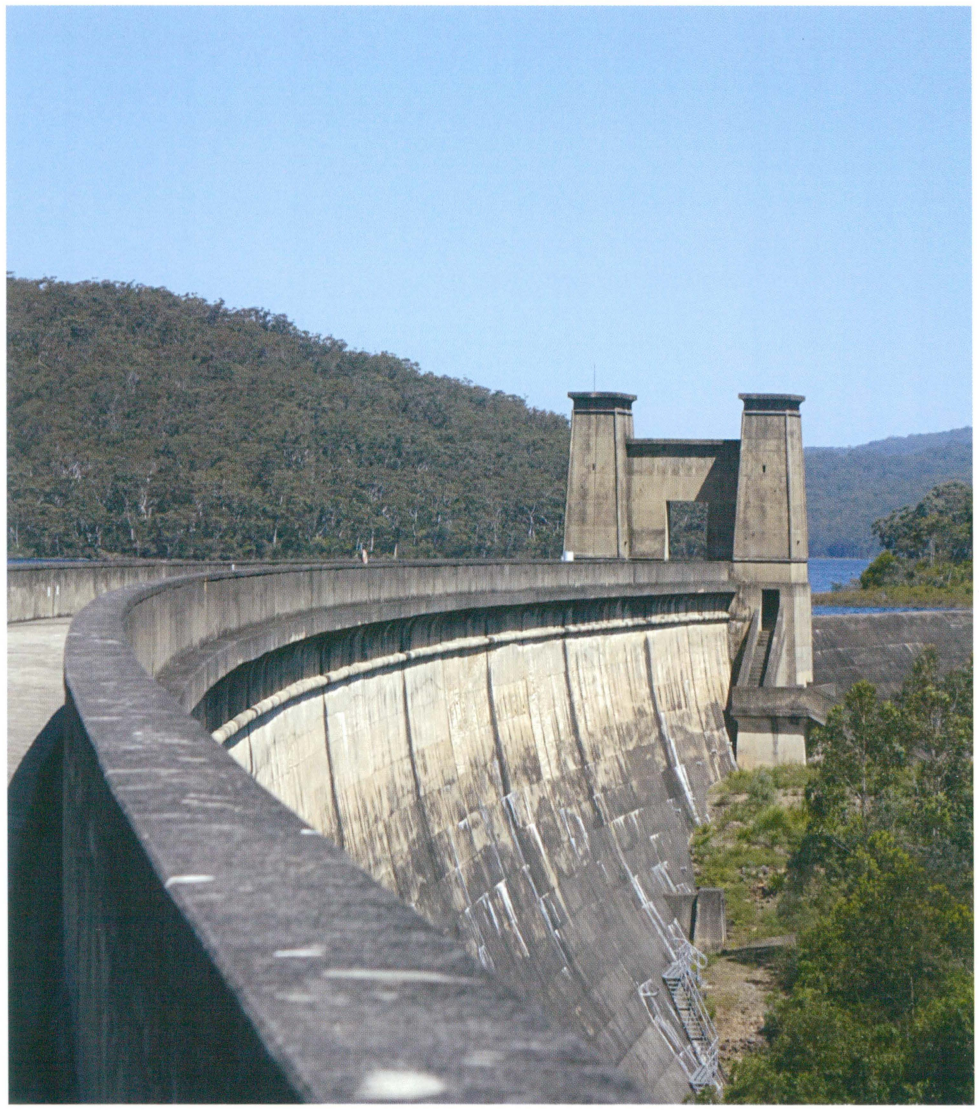
In the left abutment, the columns are missing, but the portico still retains great monumentality, with the stairs housed in its base to descend toward the abutment and the downstream-facing wall. Its image is more serious, with the role of finishing the crest and spillway, not so much as access gate to the dam. From upstream, the slight profile of the crest, reinforced by the central pylons and the top of the left abutment, offers a powerful and serene beauty, more engineering and quite foreign to the refinement of the columns of the right portico. At the valve stand next to the lower part of the lower wall there are again four lotiform columns, this time lacking grooves and rings.

These slight differences or nuances of completion seem to suggest a careful gradation of the design of each of the elements of the dam, according to the importance of its function in the whole of the work, on the other hand splendid in its general configuration and proportions.









The Avon Dam, built simultaneously with the Cordeaux Dam, maintains similar elements of design, but presents them in a somewhat simplified form. Located in a narrower gorge and covered with thick vegetation, the dam, 72 m high, has less visibility and its lower gradated wall with stony air integrates easily with the slopes. The spillway has no space next to the dam and was arranged in a side of the gorge with the excavation of a deep ditch to reach the upper level of the reservoir.

Although the crest is also curved, its smaller length of 223 m makes it difficult to obtain the visual greatness of its homologous Cordeaux. The porticos located on the abutments are similar to those of that one, although here they are identical with each other and have a lesser level of finishes. There is only one central turret, located near the left abutment.



## Classicism in Avon Dam, 1927

Avon Dam, 1927







### Art Deco in Nepean Dam,1935

Nepean Dam is already clearly different from the previous ones. Constructed eight years later in concrete, its appearance and completion are equally detailed, but have a different intention. The classicist aftertaste of the porticos of Cordeaux and Avon have been replaced by an elegant art deco taste, more 'à la page' with the times and wisely dosed in all elements of the dam. The motif consists of a cubic shape, with the corners retracted and staggered on the top, repeated in the entrance buttresses to the crest, at the stair landings, in the central inlet tower, and in the booths and buildings of all type scattered throughout the work.

Like the previous ones, the dam is gravity and curved plan, but reaches 82 ms of height. It fits in a rather anodine funnel of the river, with rocky outcrops and escarpments that contrast with the smoothness of the concrete wall. The bottom of the slopes has been modeled with staggered rough stoneblocks to accommodate the valve stand, and the spillway is angled over the right abutment and attached to the dam.

### Cutbacks in Woronora Dam, 1941

Woronora Dam, located near Sutherland, was not part of the Upper Nepean plan but was one of the group of five dams that originated with the 1902 drought. It was also recommended by the Special Board of Experts and was designed as an overpass dam of 18 m height by the engineers integrated in the Water Board in January 1927. Its design was modified in 1929 to increase up to 60 m, but the budget shortage caused by the Great Depression reduced it to only 14 m height in November 1931. The work continued in November 1935, with mass concrete instead of Cyclopean construction, and was completed in 1941.

### Guarantees with Warragamba Dam, 1960

With its deep, narrow gorge, the Warragamba River was identified as an ideal location of a dam as early as 1845. But it took a century to overcome the engineering and economic constraints before building the Warragamba Dam. The scheme was driven by the increasing demand of a growing population, and after the record drought from 1939 to 1942, the definitive site was selected in 1946 and the dam began to be built in 1948.

The Warragamba Dam is gravity and has 142 m height, with a thickness of 104 m in the base and of 8.5 m in the straight crest, of 351 ms length. It was built in concrete blocks and was officially inaugurated on October 14, 1960. It is the central element in the supply system, since its dam of 200 $hm^3$ attached to the system as a whole provides a guaranteed supply to a population of 4.5 million.

### Origin and Destination of the Water

The long and branched Warragamba reservoir narrows even more closer to the dam and with its riverlike appearance hides the water stored behind it. The 90 m wide spillway is placed on the dam body, with a central drum sluice gate and a pair of radial sluice gates on each side. Three vertical inlet wells go all the way down and, to ensure the best water quality, the inlet has a vertical sliding system of lockshield valves and screens to isolate and conduct the water to one or another intake height. Beside the right abutment, an auxiliary landfill of 190 m of capture width has been provided to protect the dam from extraordinary floodings.









Nepean Dam, 1935



Warragamba Dam, 1960

On the right bank of the long dam a modern museum has been built —an information center on the dam and the supply system of Sydney, frequented by schoolchildren and tourists, with exhaustive information. A large balcony allows you to contemplate the dam from above with the side spillway in the foreground, and a large blue gantry crane for cover maintenance. One of the four original 2.1 m diameter valve assemblies manufactured in England and installed in the dam in 1958 has been preserved in the car park. Each set consists of a needle valve with a valve gate at each end. The original valves were replaced with more efficient German butterfly valves in 2006.

A nearby and well-documented poster recalls the Aboriginal presence in the area, where the Gundungurra speaking tribe maintains a strong and lasting connection with the land. When the dam was completed in 1960, the Burrangarong valley upstream was flooded, creating a new vital water reserve for Sydney, but it submerged a long stretch of traditional Aboriginal lands and farms and communities of foreign settlers. The reservoir collects water from a vast basin of more than 9,000 km2 to the south and west of the dam. Nearly a third of the basin is a protected mountain area, which also houses various communities where more than 100,000 people live on rural properties, towns and cities as far away as Lithgow and Goulburn.



Warragamba Dam, 1960

Warragamba Dam-museum



## Treatment and Discharge of Effluents

With the completion of the Warragamba dam in 1960, more funds could be devoted to sanitation and sewage works. In addition to addressing the large collectors of Bondi to the north and Botany to the south (see Chapter 3) and the sewer system, which were experiencing tremendous delays, special emphasis was placed on the treatment of wastewater and underwater discharges.

In the three major points of discharge —from North Head, which collects the north zone of the bay, to Bondi, which canalizes the zone of the south bank of the bay, and Malabar, located between Bondi and Botany Bay, which collects a great area with all of the CBD plus the west and south zones of the city— the construction of large treatment plants was envisaged to complete the water treatment before discharging it into the ocean. For the new drainage systems located in Warriewood and Cronulla, of much less capacity, the treatment works were built as an integral part of the total schemes [23:33 and 40].

In general, plants located near the coast collect and apply a primary treatment to the effluents, discharge them in a steep sloping tunnel to another horizontal tunnel located about 80 m below, which has a length of about 4 to 5 km, and goes deep enough to discharge them from the bottom of the sea, through a series of vertical diffuser wells.[44]

## Harbour Bridge, 1932

Early but Late

The crossing of the port to North Sydney had been a goal since 1815, when Government Architect Francis Greenway made a first proposal. Then there was a 1857 drawing by a certain Peter Henderson, who had contacts with the luminaries of English engineering, Robert Stephenson and Isambard K. Brunel. There was talk of floating solutions and there was even a proposal of a suspension bridge by John Fowler, co-author of the famous Firth of Forth, and later, of a tunnel, debated seriously for years. By 1890, its necessity became evident and eight options were studied more systematically, choosing to cross the port with a single span bridge of sufficient height so as not to disturb navigation [23:111].

However, the official consensus to build a bridge rather than dig a tunnel was reached in 1912, *after the engineer JJC Bradfield convinced the politicians that it was possible to construct a single span which would not block shipping with additional pylons rising up mid-stream... But the exigencies of World War I delayed the final legislative approval until 1922. Soon after, Bradfield's preference shifted from cantilever designs, in which trusses draped down from pylons like lacework, to an arch bridge that rose up above the harbour like a rising sun. The latter had definite engineering and cost benefits and the geology of the sandstone foreshores at Milsons Point and Dawes Point made it viable. An arch was also, in Bradfield's view, the 'most handsome' alternative.*

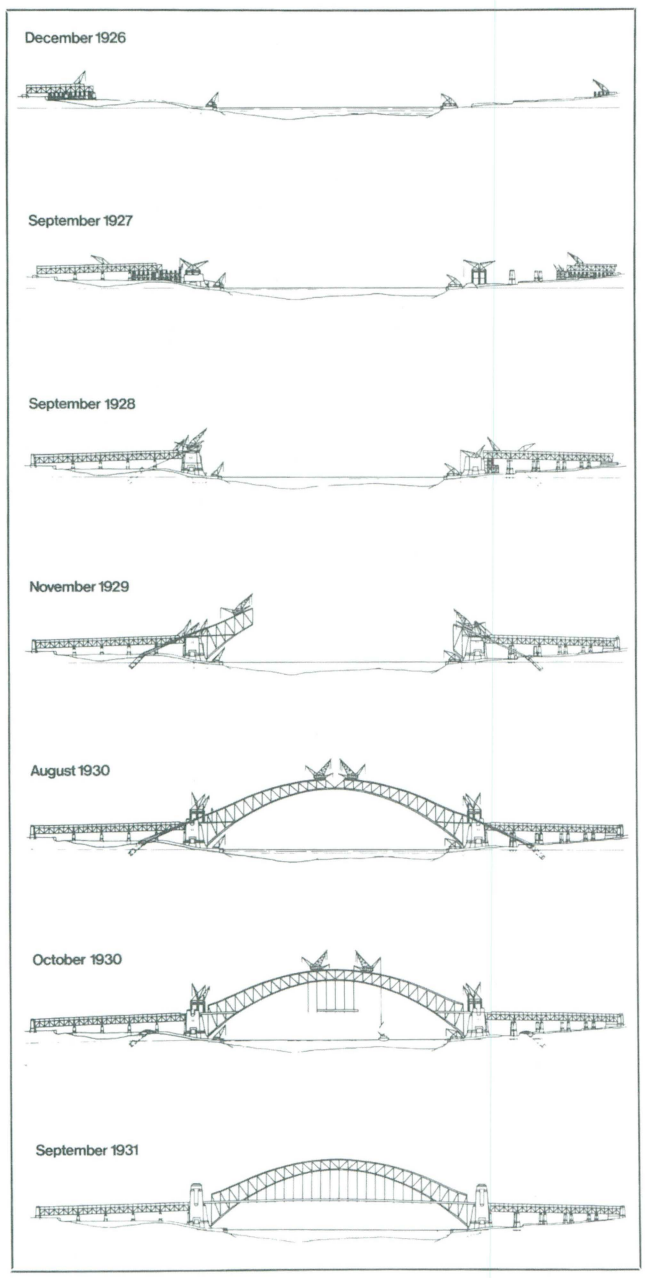
But the Harbour Bridge came late at the end of a spectacular period of bridge construction, which began in 1883 with the Brooklyn Bridge and continued in 1890 with the great cantilevers of the Forth Bridge in Edinburgh and the Queensboro Bridge of 1909 in NY. When it opened in March 1932, the Sydney Bridge was 60 centimeters shorter than the Bayonne Bridge, the arch that connected New Jersey and Staten Island in 1931. But it was wider and heavier than that, or than any other in the world [35:222].

Successive Overhangs for the Span

The first stone of the Sydney Harbour Bridge was laid in 1923 and, irrespective of the gigantic work of the accesses, after raising the supports of the joints, the great arch began to be built by successive overhangs from both abutments. At each end of the work was a mounting crane, hoisting the latticed sections of the arch, brought in barges located below. When the stresses on the base due to the overhang were excessive, the ends were secured with additional cables, anchored in deep tunnels dug into the rock of the abutments.

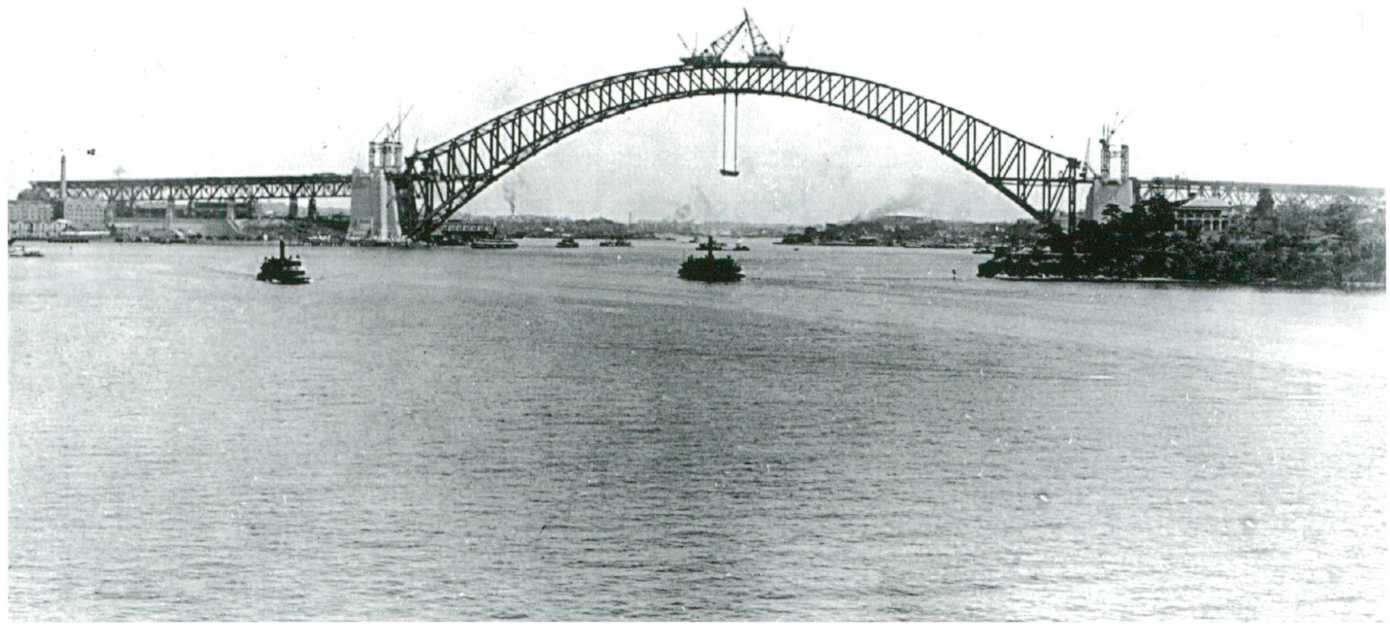
On August 7, 1930, when the overhangs of the two halves were 1.1 m distant (3 ft and 7 in), the cables were slowly loosened until, at 10 p.m. on August 19, the two halves were linked permanently. Thereafter, the structure was a self-supporting arch, subjected to a tensional state more similar to the final one. Progressively, the vertical beams were connected to the intrados of the arch and the sections of the lower deck were hung.

Each part of this large structure had been manufactured in a large, state-of-the-art workshop, located near the Olympic pool and Luna Park, from where it was floated to its place in barges and elevated to its definitive position. The last rivet was placed on November 26, 1931. The load test with 72 steam locomotives was performed in December and the bridge was officially opened on Saturday March 19, 1932 [23:110].




Sydney Harbour Bridge [23:110]

Sydney Harbour Bridge



Looking west to the Harbour Bridge, road frames start construction, c. 1930. Courtesy of City of Sydney Archives. Graeme Andrews 'Working Harbour' Collection: 79788

## Unwise Criticisms

Due to its technological lag and its lack of formal innovation, the beautiful and almost unequalled Sydney Harbour Bridge has been undervalued or criticized by most bridge makers and by many architectural critics, including Australians. Excessively attentive to its technical conditions or its resemblance to other bridges, these criticisms do not adequately assess the demands of the site, nor the contribution of the person responsible for its construction, J J C Bradfield.

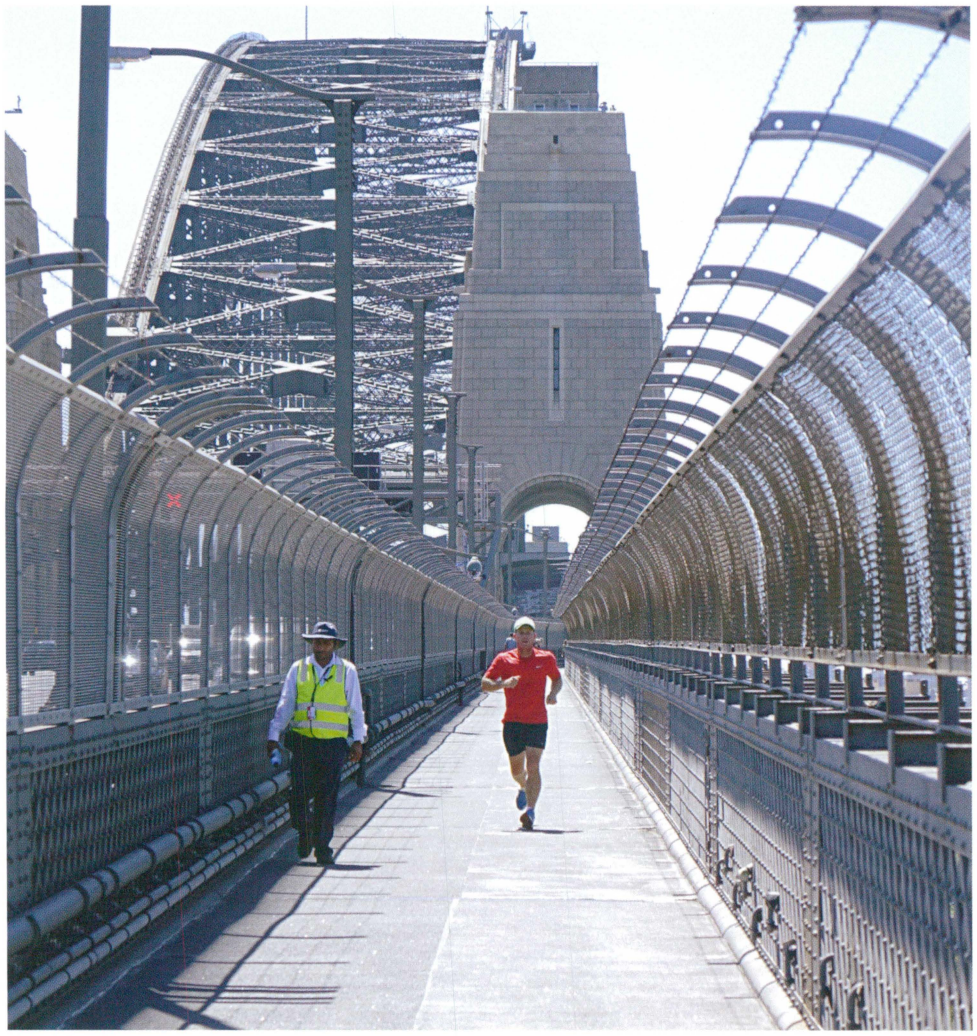
At the end of the 1950s, Australian architect and critic Robin Boyd said about the bridge in his abovementioned book *The Australian Ugliness* [7], where he establishes a whole aesthetic theory about Australia: *The Harbour Bridge is a typical Australian big government project in that it was designed outside Australia. It is also characteristic of Australia in that its design is a spectacular example of Featurist irrationality. The giant arch of trussed steel, the suspension rods, and the wide, thin deck they support make up the whole bridge. But they were not enough. The stone pylons at each end of the arch were raised as towers above the deck almost to the soffit of the arch.*

*Most people at the time it was built appreciated that the pylons were redundant features, but the stonework was welcome as a necessary addition to make the steel presentable. The steel itself was understood to be necessarily ugly; it needed camouflage. The pylon towers reverses the natural shape of the arch by transferring the emphasis from the centre to each end, where everyone who was used to see suspension bridges expected to see high pylons. The silhouette now became vaguely, cosily reminiscent also of the Tower Bridge in London. The pylon features thus successfully destroyed the visual reality of the steel bridge, while relieving Sydney of the expense of covering the whole arch with stone veneer. They were a triumph of disruptive patterning* [7:34].






NO ENTRY
ONE WAY
NO ENTRY
ONE WAY





As we can see, and regardless of the success of such a constructive achievement, the design was regarded with some suspicion by a critique overtly attentive to emphasizing its weaknesses, but ignorant of its unquestionable strengths.

First, Bradfield's authorship was to be understood, as is often the case, in relation to the fit of the great structural scheme in the local parameters. It is well known that the constructive design of a large metal arch and the many details required for its enormous size are only accessible from the experience of previous bridge designs in these or similar dimensions. As there were no engineers or companies with such experience in Australia, they had to be sought in England, in the United States, and with less likelihood, in other European countries. Following an international competition, in 1923 English engineer Ralph Freeman was chosen for the role.

## Contexts and Nuances

But whereas Freeman undoubtedly provided the technical support to the construction project, he does not seem to have beeen responsible for the general scheme of archways with stone towers in the abutments. Bradfield had been working on preliminary plans for the bridge since 1911. He was named *Chief Engineer, Sydney Harbour Bridge, City Transit and Metropolitan Railway Construction*, in 1912. In principle, Bradfield considered three types of bridge, suspension, cantilever





Hell Gate, New York

Queensboro Bridge, New York

## Bradfield Visits New York

and arch-cantilever, although he was in favor of the more technological one, the cantilever bridge. It is a so-called evolutionary structure, that is to say, that it can be supported by what is already constructed without need for excessive auxiliary means, with a technique usually denominated 'successive cantilever.'

The construction of the Harbour Bridge was authorized by law in November 1922, without specifying the chosen structural type. Bradfield had traveled in March of that same year to New York, where there had been a fierce public debate in the previous years on the large-span bridges to cross the East River. After the construction of the Brooklyn suspension bridge in 1883, designed by John A. Roebling with 486 m span, the Williamsburg suspension bridge had been built in 1903, with only 2 m more span, probably with the intention to snatch the world record from Brooklyn Bridge.

The suspended Brooklyn Bridge, beloved and admired by people, provoked accusations of wastefulness towards the engineers. Trying to prove their frugality, the engineers designed the Williamsburg bridge on half the budget, but nobody liked the bridge. The controversy led the mayor to terminate the engineer of Manhattan's suspension bridge, 448 m span over the same East River, when it was half-built, to appoint instead Gustav Lindenthal, a more conservative engineer, enemy of suspension bridges. At the Manhattan Bridge, Lindenthal could not change much, but he decided that the neighboring Queensboro Bridge, which was not yet started, would be a cantilever, such as the Firth of Forth railway bridge in Scotland, completed in 1890 with a world record setting span of 520 m.

But in 1907 the collapse of the cantilever bridge of Quebec occurred, due to the buckling failure of a chord during its construction, led to a deep revision of the technical preferences of engineers. In 1909, the Manhattan suspension bridge and the Queensboro cantilever bridge, begun about five years before, were completed. And in 1916 the Hell Gate railway bridge in cable-stayed arch was finished, designed by Gustav Lindenthal with 298 ms span, on a narrowing of the same river [2:123].

## Image versus Economy

The completion of so many huge bridges in a short period of time, together with the long decision and construction deadlines of each of them, produced a concentration of almost simultaneous designs and works in the same city, which coincided with the





Bayonne Bridge, New York

Harbour Bridge, Sydney

bridge collapse in Quebec. This generated a great deal of interest on the part of technicians and the general public in the structural types and design criteria chosen for each bridge, and sparked a great debate in the press regarding their appearance and resistance capacity that decisively influenced the decisions of the City Council of New York. Politicians decided to support popular pride in the symbolic, as opposed to narrow economic considerations: in a big city, bridges have a value that goes far beyond the functional.

The 'winner' of this controversy was the Hell Gate Bridge, made with a cable-stayed metal arch and two stone towers in the abutments at the joint in the ends of the arch. The arch was a structural form with classical roots, whose traditional acceptance was reinforced by the use of stone in the towers, capable of neutralizing the suspicion generated by the iron employed in the arch. The tradition of the form 'balanced' the modern functionality of the metallic elements, *while the shape of the arch and the use of stone in the piers...indicate its unequivocal monumental vocation.* Critics as harsh as Carl Condit called it the best arch in America [2:130].

On the way back from his study trip to New York in 1922, J. J. C. Bradfield proposed a 503 m (1650 ft) cable-stayed metallic arch with stone towers as supports. He chose what had already triumphed in New York, and he was quite right at that, for the image of the arch as a portico over the bay would be more accepted by politicians and the public than the triangulated or suspended silhouette of more technical designs. And although the final design of the Harbor Bridge lacks the power and compactness of the Hell Gate Bridge, which earned it the favor of New Yorkers, the Sydney Bridge is nicely embedded in the bay and its proportions lend it greater lightness.

## Success of the Arch

To this contribute, perhaps, its 200 m more span and an inverse curvature of the upper chord of the arc, barely insinuated, that is to say, less pronounced than the one of the Hell Gate Bridge, much criticized on account of its arbitrariness by several great bridge designers. The design of the towers also helps, totally oblivious to the classicism of Hell Gate's towers and closer to the smoothness of art deco, although its size seems somewhat lacking in relation to the span, in spite of the massive presence of its closeness. And, although it seems a minor matter, the upper chord of the arch

## The Harbor, Initiatory Destination

does not touch the tower, as it did in New York, making the arch neatly independent of the towers. In this way, its structural role is summarized as a mere weight on the abutments, in order to reduce the horizontal thrust of the arch on the foundation.

It seems clear that Bradfield was inspired by New York and assisted by London in the calculation, but finally achieved the best design in Sydney. The arch is the best solution for the harbor, which incorporates it as an entrance gateway to the city at the end of the entry route through the bay. Most critics base their aesthetic judgment on the bridge on reasons of resistance or form, but perhaps they have not sailed by the bay, or have failed to appreciate the importance of the mutual relation of bay and bridge.

Entrance by ship is like an initiatory rite of access to the city, and it needs the bridge as an appropriate destination to culminate its plenitude.

Dawes Point Park



## Pedestrian Circuit

The south access runs over the ridge of the promontory of The Rocks, diverging from it to gain height until it reaches the pylon, where it is becomes horizontal. To give access to the east sidewalk of the bridge, reserved for pedestrians, there is an elaborate stairway that rises at the beginning of King George V Memorial Park, with access from Cumberland St, before the deck leaves the abutment to become an access viaduct over Daves Point Park.

A large round arched façade gives access to the staircase, marked by an elegant lamp that tops off the handrail, and to a passage below the deck that gives access to the sidewalk on the other side —reserved for bicycles— by means of a symmetrical staircase. The frontal façade gains volume and offers another corner façade over Argyle St, which crosses orthogonally under Cumberland St and then traverses a wide tunnel under the abutment of the Harbour Bridge.



Harbour Bridge from Observatory Hill Park




Paths of Reconciliation




## Sorry Day Bridge Walks




At the corner of the staircase, as commemorated in a circular plaque on the ground, begins the Corroboree Bridge Walk, or Reconciliation Path, on which hundreds of thousands of Australians cross the bridge together, not on the right side of the bridge but together occupying the whole of the bridge. They tried to recognize the impact of the policies of forced separation imposed on the Australian Aborigines and the natives of the islands of the Torres Strait, enforced by a law of 1909, and to apologize and make reparations for it. The first of these marches was celebrated on Sorry Day, May 26, 1997.

Since then, several Sorry Day Bridge Walks have been celebrated. Prime Minister Kevin Rudd participated in the march of February 23, 2008, and apologized to Aboriginal and Islanders for the policies that *have inflicted profound grief, suffering and loss on these our fellow Australians.*[45]

## The Sydney Harbour YHA

Next to the entrance to the pedestrian circuit, a new hostel has been built for the Youth Hostels Association (YHA) in an area of The Rocks that preserves remains of old settlements. The building has been lifted from the ground by means of a light metallic structure of careful design, leaving visible several patios and accesses, to showcase the ancient remains. The old alleys and stairs have been preserved as ways of access, keeping as much as possible the original pavement.

The design of the new building is sober, with reddish ceramic enclosures on a gray metal structure, and white windows and blinds, in contrast to the stony remains of courtyards and alleys.

At the bottom of the sloping plot an interpretation center has been built: The Big Dig, Archeology Education Center. And in several places of the complex informational posters have been placed that explain the cultural memory of the previous populations, including the Aboriginals from the fifteenth century, as well as the convict population from the beginnings of the nineteenth. They cover the most varied topics, from an epidemic of bubonic plague, illustrated with a large pile of dead rats, to the instructions for the operation of a well or the detail of the original cobblestone of the current access.



Circular Quay in Sydney Cove



Circular Quay

## Circular Quay, Heart of Sydney

After almost 40 years of planning, design and construction, in 1956 Sydney's key public transport hub, *Circular Quay Railway Station and Viaduct*, was inaugurated, culminating the grand project of the Circular Quay dock. It includes the railway station and the elevated access to the Harbor Bridge, the piers for the ferries, the new maritime station, the promenade of the pier and the important buildings at the edge of the water, to constitute the meeting point between the harbor and the city.

The true heart of Sydney, Circular Quay shelters in its curved bay —the Sydney Cove of the foundational landing— trains, buses, cars, ferries, transatlantic ships and many, many people, while providing the city with its main façade. The ends of its boardwalk connect the two great icons of the Harbour Bridge to the west and the Opera House to the east, while the dock opens onto the bay to the north and receives the most important streets of the city, George St and Macquarie St, to the south.

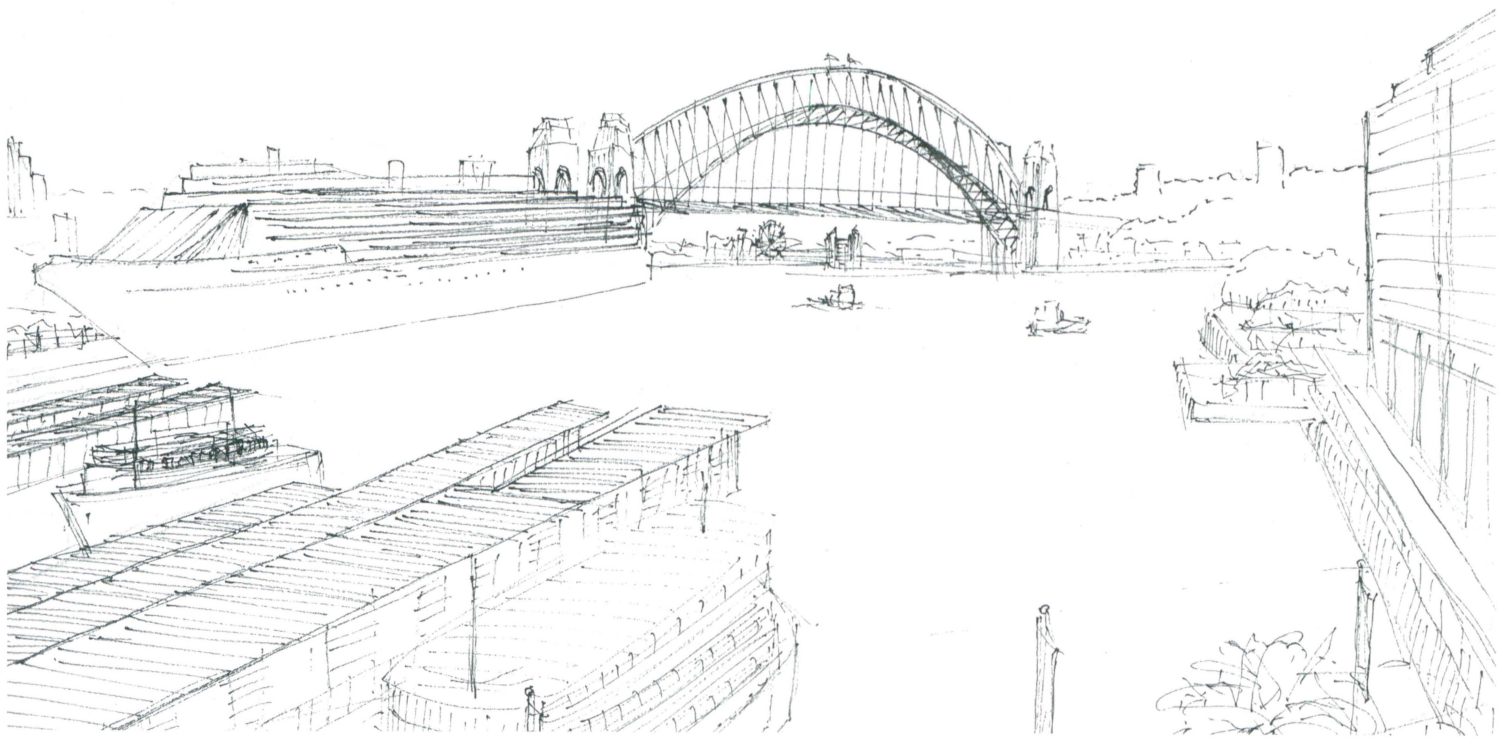
Station and Viaduct of Bradfield, 1956

The station and viaduct designed by Chief Engineer J. J. C. Bradfield close the loop of the layout of the Metro and culminate its construction in the center of the city. Following the various solutions proposed to the Commission for the Improvement and much debate, Bradfield opted for a single long, flat building, of modern manner with slight touches of art deco, conceived with a clearly functional vocation. The building shows exquisite care not to interrupt the vital connection between harbor and city, both in functional as in visual terms.

The railway runs through a metal viaduct and the station consists of two elevated concrete platforms on both sides of the tracks, served by a lower core of services, connected to the platforms with elevators, escalators and stairs. The outer façades are of polished gray granite, in contrast to the warm reddish appearance of the sandstones used in Sydney's representative buildings.



Observatory Hill Park. PHL, 2016



Circular Quay. PHL, 2016



Aerial view of Sydney and Circular Quay on the day of the official opening of the Sydney Harbour Bridge, 19 March, 1932. Edward William Searle,1932, Courtesy of National Library of Australia, nla.obj-142172154

Museum of Contemporary Art



## Waterfront

The western side of Sydney Cove was an important site for boarding operations and sailors in the nineteenth century. From the late 1830s until the rehabilitation of Circular Quay in the 1850s, there were no docking rights in Sydney Bay, where boats could be moored. Merchant ships, for their part, were to anchor in the cove and to load and unload by means of barges before they could use the docks and the shipyards of the government.

## Commissariat Store, 1940

The oldest building on the seafront is the Commissariat Store, a large sandstone structure designed by Lieutenant Colonel Joseph Foveaux in 1809 and built by order of Governor Lachlan Macquarie in 1812. It was used to store and supply provisions to the inhabitants of the penitentiary colony and its functions increased in parallel to the population during the nineteenth century.

In the late 1830s, the Ordnance Department took over some of its functions, such as military supplies, including foodstuffs and fuel. Although the system of transport of convicts to New South Wales officially ceased by 1840, the Commissary and Ordnance Departments retained control of convict settlements in the colony until 1855, supplying British military personnel until their retirement from Australia in 1870.

## Formation of the National Trust, 1945

As early as the 1900s, the Commissariat and Ordnance Stores buildings were used to house several government departments as well as commercial offices. But plans to demolish several buildings of the Macquarie era in the late 1930s, including the Commissariat Stores and the Hyde Park Barracks, catalyzed the birth of a movement for the defense of the historic heritage. Threats of demolition of these two buildings sparked debates in the Sydney Morning Herald, and eventually contributed to the formation of the National Trust in 1945. Despite public outcry, the state government




Enlargement of the Museum of Contemporary Art

won the battle and the Commissariat and Ordnance Stores were demolished in 1939. The sandstone blocks hand-carved for its construction were reused in the area of The Rocks.

That same year, William Henry Withers, architect of the Maritime Services Board [MSB], designed an art deco building for the organization's headquarters there, but the work stopped from 1940 to 1944 due to the shortage of building materials and workforce in times of war. The solid and imposing six-story building now visible was built with a steel structure embedded in concrete, local materials for interiors, brick façades clad in sandstone and a monumental entrance of red granite. The headquarters of MSB was officially inaugurated in 1952.

In 1989, the MSB, renamed Sydney Port Authority, moved to another location and the state government ceded the building to the University of Sydney to house the Museum of Contemporary Art, under the direction of Andrew Anderson, and the museum was officially inaugurated In November 1991.

## Museum of Contemporary Art

Soon the premises were too small and a new building of five floors and 4,500 $m^2$ was proposed for its enlagement, located just next to it towards the north. The enlargement assumes its prominent location in Sydney's oldest site, the site of Captain Phillip's landing, and the subsequent conversion of that place into the most coveted of the entire port. Its lobby opens onto the harbor, with dominant views over Circular Quay, and a terrace was built over the older building with similar intent.

However, in front of the enlargement, a new maritime station was set up to serve the most privileged mooring point in the world, where the Queen Mary 2 and other famous ships dock, and whose volume partially obscures the new building and obstructs its views towards the Opera House.



## Customs House

The southern façade of the station and the viaduct is ennobled by means of a large square, on grounds gained from the bay, where, in addition to various sculptures, plaques and other advertisements, is located a fountain with a narrow pool of curvilinear shapes, ending in a small circle with four slender or, better said, stretched out figures on top. It indicates the place where the Tank Stream, the original water supply of Sydney, recently rememorated in the aforementioned Tank Stream Art Works (see Chapter 2), flowed out.

At the bottom of a widening in the center of that square, is another of the oldest and most famous port buildings, the Customs House. Built in 1844 to house the Customs service, it has undergone important transformations and changes of use. In 1870, its two initial floors of Georgian style, designed by architect Mortimer Lewis, were demolished, and soon they were increased to three with a project of James Barnet in 1887, that later underwent new modifications, though maintaining the lines set by Barnett.

In the 1990s it was handed over to the City Council to become a venue for events and exhibitions, and in 1999 it was completely renovated and rehabilitated to become a tourist gateway to the upcoming Olympic Games, as a cultural and information center of the city. It has a large influx of tourists looking for information and neighbors who come to read the press. The vestibule extends upwards with an atrium and downwards with a large model of the city, built under a glass floor, on which one can walk.

Customs House






The first skyscraper to exceed the 45 m height limit set in 1912 was the AMP Building by architects Peddle, Thorpe and Walker and structural engineers Rankine and Hill, completed in 1961. The AMP was located on the front line of Circular Quay and, for years, monopolized the view of the city from the north shore and the Harbor Bridge. This 28-story structure has a metallic skeleton, with concrete screens in the side façades and aluminum curtain walls in the other two, and rises to a height of 117 m. Later, a higher building, named AMP Centre, rose immediately behind it.

Circular Quay Station in c.1965 showing the AMP Building behind which began to change the city skyline. Courtesy of Australian Railway Historical Society, Railway Resource Centre, 047666





Macquarie St.

Moore Steps

## To Macquarie St through Moore Steps, 1861

The slope between the docks of Circular Quay and Macquarie St is overcome by means of a large wall of increasing height towards the center of the city, formerly occupied by a large store dedicated to the maritime trade of wool and now concealed by the first row of towers and buildings located on the east side of the dock. The activity extended along the east sidewalk of Macquarie St, which at that end received the nickname of *'wool store,'* while the west side was still dedicated to the Botanic Gardens and the Domain.

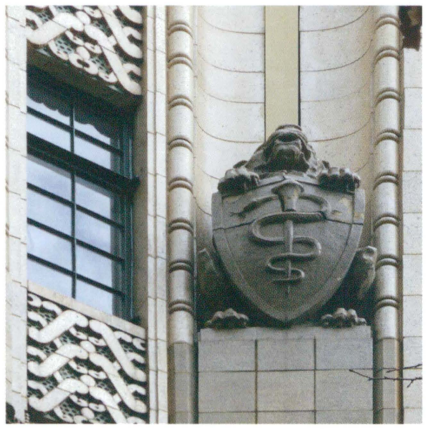
To overcome this slope, the historic staircase of Moore Steps was built in 1861, with two sections and a central landing, with sandstone parapets on three vaults, also of sandstone. The pier landing is marked by a low pilaster on each side, which finishes the parapets, while the upper access to the street adds another pilaster on each side and doubles their height. With this, the top of the staircase is highlighted with four equidistant pilasters that protrude from the parapet and add monumentality to the whole.

On both sides of the staircase, in 2003, the Bennelong apartments, which hide it from the sides, were built, leaving only a central opening to appreciate its dignified appearance, somewhat burdened laterally by the presence of tables on the terrace of a restaurant.

Back in the day, as seen in Chapter 2, Macquarie Street continued the port activity but now it constitutes the 'monumental' connection of the great public spaces of the city.







British Medical Association

To the left side, going up to the city, the palace and the Domain of the government, the Conservatory, the museum and the library are located, before giving way to the Rum Hospital and the Hyde Park Barracks. On the other side are several noble buildings and access to the heading of the other large public space of Martin Place, while the street heads towards Hyde Park, where it ends next to St Mary's Cathedral.

The British Medical Association House (BMA), located at Macquarie St 135 and designed by Fowell & McConnell in 1928, maintains the gothic tendency of earlier periods present in the center of the city, although with early modernist nuances. The artisanal treatment of the work of the balconies and the inclusion of knight figures with green medical shields in the staggered coronation of the intermediate pillars, which transform into koalas at the ends, underscores a certain air of 'New York' style. The building won the bronze medal of the Royal Institute of British Architects (RIBA) in 1934, according to the jury, for being the first in Sydney 'to throw emphasis on general mass rather than concentrate on the effect of the front elevation' [26:54].

**BMA in Macquarie St**




Martin Place




Mutual Life & Citizens




Dawes Point

In the area of Martin Place there is another series of related large buildings. The former Mutual Life & Citizens, located at Martin Place 38-46, on the corner of Castlereagh St, is the result of a competition convened by the major insurance company in 1936, won by the team of Melbourne architects Bates, Smart & McCutcheon.

The office tower had the maximum height then allowed of 45.7 m (150 ft), with a tower on top of another 15.2 m (50 ft), built with a metallic skeleton and façades covered with stone, pink granite below and sandstone in the upper floors. The windows are grouped in pairs between curved pilasters, with enameled steel windowsills, decorated with horizontal splines.






Olympic Pool

## Luna Park & Olympic Pool

Upstream the northern abutment of the Harbour Bridge, portuary activity left room for new leisure and recreation areas, specifically designed to change the industrial character of that bank of the port. In keeping with the sparkling Luna Park, new sport facilities were created and the entire north bank of Milsons Point associated with the bridge was redesigned.

The first park was built in 1935 at the foot of Sydney Harbour Bridge. Many of its attractions were inherited from Luna Park Glenelg, in South Australia, which had serious difficulties. After a fatal accident in 1979, Luna Park Sydney closed and was partly demolished, but a new park was built, under the name of Harbourside Amusement Park (1982). It is listed by the National Trust of Australia, and together with Luna Park in Coney Island in New York, they are the only two amusement parks protected as heritage by government legislation, valued as authentic landmarks and referents within the city.

An Olympic swimming pool at sea level was added to Luna Park in the following year, 1936, that maintained the competitive tradition of the national swimming in the bay. It was built in grand style to host the Empire Games of 1938, later called Commonwealth Games, according to a classicist design close to art deco by Australian architects Rudder & Grout.

The placement of Luna Park and the Olympic Pool on the north side of the Harbour Bridge was fiercely opposed. The Town Planning Association of New South Wales was dismayed by the decision. *'A Luna Park at Lavender Bay,'* it argued, would *'despoil the foreshore... and lower the dignity of the city.'* For its part, the North Sydney Council was determined to attract jobs and businesses to an area still stunned by the opening of the bridge and the subsequent economic slump. Councilman Hardy replied, not without reason: *'I haven't seen any natural beauty in Lavender Bay during the past 35 years.'* When the Australians competed in the Olympic pool against Brits, Canadians and others, they were swimming in the harbor water, pumped and filtered with the latest technology. Humor was as common in the North Sydney Council as marine litter [35:224].

Right next to the bridge, the spectacular North Sydney Olympic Pool is still open all year round from 5:30 a.m. to 9:00 p.m. and offers salt water baths in the dawn light or late at night, under the imposing silhouette of the bridge and its hundreds of lights, accompanied by the rumble of cars and trains sheltered in its lattice. The steps on the hillside allow a view of the surface of the water and the grand metallic arch above the white painted brick arches of the promenade wall, with colorful animal frescoes and birds on the tympanums.[46]

In successive renovations of the 1960s and 1970s, the pool lost some of its old charms, such as the famous springboard against the backdrop of the bridge, and shortened its length to the 50 meters prescribed by the new Olympic measurement. In spite of this, the ensemble retains much of its initial elements, from the entrance signs to the Roman-style children's baths.

And it always retained some of its initial appeal, from its first consideration as 'the wonderful pool' going through the aura of great achievements in the country's top sport, with more than 86 world records in different styles of swimming, to the present magic of the place, with the great stage of the water and the city under the bridge, or the lights and stars of the front of the Luna Park on the other side.



Harbour Bridge, Vivid Sydney




Luna Park



Observatory Hill Park. PHL, 2016



Sydney Observatory



Agar Steps

## Coastline, Parks and Beaches

### Remaking the Waterfront

Created in 1900 in the midst of the governmental response to the outbreak of bubonic plague, the Harbour Sydney Trust built in the next two decades port facilities that reconfigured the foreshore of the port in the urban area. From Circular Quay, around Dawes Point and Millers Point and along the entire length of Darling Harbour to Pyrmont, Hickson Road was built, a new 30 m wide port roadway with warehouses, shore sheds, the double-storey Finger Wharf in the bay and long wharves at Millers Point. These works formalized the foreshore, giving the city a distinctive right-angled north-west corner [60:48].

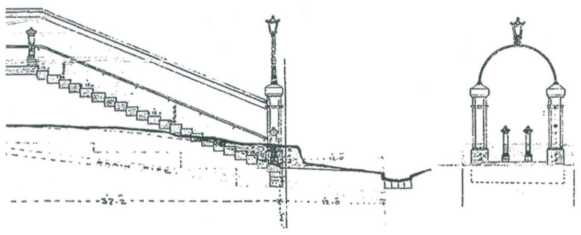
Somewhat farther from the shore, but still on the coast, some buildings were demolished and the Public Works Department, the newly established *Housing Board* and other agencies straightened and paved streets, and built public housing at Millers Point and The Rocks. From the 1950s to the 1970s the timber wharf warehouses located around Darling Harbour were demolished to make way for container wharves, while in other places they were simply neglected. In the early 1970s the Maritime Services Board planned to demolish the remaining timber wharves, but this project was never completed [60:48].

Deep down, the wealth of coastal spaces and their beauty are as overwhelming as they are difficult to match. Strolling along the southern end of Bondi Beach, Carey wonders: Can Rio match this? The high sandstone cliffs? The intimate bays? The incessant display of beaches stretching south, Tamarama, Bronte, Colvelly, Coogee, so many that not only the rich have not bothered to claim the territory, but the dead have been assigned hectares of absolute sea frontline. The dead of Waverley Cemetery have the best views of the harbor.

For Peter Carey, this is one of Sydney's distinctive features: there are so many miles of harbor, so many miles of shoreline, that the normal pressures for space are much less pronounced [9:93]. If we add to this the late foundation of the city, it is indeed easier for buildings and other constructions to survive since, as the years go by, they acquire the value of antiquity and become candidates for heritage protection. As will be seen later, only residential pressure on the shores of Sydney's own bay has been and is so strong as to require, for some time, additional protective measures.

### Observatory Hill Park

This hill known as 'Fort Phillip and Flagstaff Hill' boasts a privileged elevated position with a wide panoramic view of the bay and the Harbour Bridge. Formerly it was presided over by the city's first windmill, built in 1796 by Irish convict John Davis. This first stone structure lost its sails in a storm in 1805 and a second wooden mill was set further south. These mills gave the name of Windmill Hill to the hill and the area came to be known as Millers Point.



Detail of lamp frame and part section, Flagstaff Steps, now known as Agar Steps. Edward Bell, 1869. City of Sydney, Part plan E3-289/3. [50:192]





Dawes Point Park

Traces of the Former Officers Quarters

Starting in 1858 the building of the observatory and the residence of the astronomer took place, both in local sandstone. In addition to being used for astronomical observations, it was used to indicate the correct time: every day at one o'clock in the afternoon, the ball fell from the top of the tower and the cannon fired to warn the ships of the port, allowing the calibration of marine chronometers. In 1982 the observatory closed due to luminosity and pollution, and was converted into the present museum.

Given its strategic position as the highest panoramic point in the city, in 1800 Fort Phillip was built there, with a large battery of cannons. Its high elevation also allowed the establishing of a signal station in 1825 to communicate with the ships of the bay through flags and traffic lights; and starting in 1847 a Telegraph House was built to service all the maritime activity of the port.

The hillside park has a landscaped character with prairies, meandering paths and large Ficus (*Ficus macrophylla*), planted in the 1880s, during the period of the signal station. The palm forest, next to the stairs of the Harbour Bridge, is of a second planting phase in the 1930s, coinciding with the completion of the bridge works. It has a music kiosk and the Boer War Memorial, dedicated to the volunteers who served in the Anglo-South African War (1899-1902). One can access the park through the ancient Agar Steps (1892) on Kent Street, via an underpass below Harbour Bridge from Cumberland Street, or via a pedestrian bridge from the city center via Bradfield Highway. It is also connected to the bike path on the deck of Harbour Bridge.

### Dawes Point Park

On its northern side is Dawes Point Park, named after Lieutenant William Dawes, the astronomer who built an observatory there in 1788. Its cannon batteries are testimony to this first fortified enclave of the country, built in 1788 to protect the cove of foreign invasions. The fort of Dawes Point Battery operated until 1916, then relocated by the construction of the new Sydney Harbour Bridge.

The park is connected with the underside of the bridge and it develops under the imposing structure between its piles on the south side, endowing it with historical significance. It is divided into two zones by Hickson Road. The lower part in contact with the water has a large flat meadow with palm trees, whereas the top part has a large slope. Recent archaeological excavations have uncovered the remains of the Former Officers Quarters of 1857, used after World War I as a training school for returnees, and from 1925 to 1932 as the offices of the bridge builders, Dorman and Long, until their demolition.

### Wentworth Park

Wentworth Park is located east of the Glebe neighborhood and overlooks Blackwattle Bay. Originally in this place there was a marsh called Black Wattle Creek or Swamp. Between 1830 and 1860, several noxious industries were installed on its edges and the forests on its banks were used for construction. This wet zone was filled between 1876 and 1880 to eliminate the bad odors by constructing several dams; and two years later a competition was called for a new park on the newly won land. The park, named after the statesman, William Charles Wentworth, comprised lakes, green







Glebe Railway Bridge and Wentworth Park

Glebe (or Wentworth) Railway Bridge 1892, 1922 from Sydney Tower

## Glebe Railway Bridge,1892, 1922

ovals, trails and various facilities for concerts and community events, and was very popular during the 1880s and 1890s.

In the early years of the twentieth century the lakes were eliminated and a kindergarten was established in 1914. During the world wars in its northern part wooden sheds were built to store wool, which were demolished in the 1950s. At the moment the park is formed by a great prairie where in the north part the protagonist is the curved viaduct of the elevated railway that crosses the space transversally. It is the longest brick arched viaduct in New South Wales and currently supports the Sydney Light Rail.

Due to the character of the land, the brick had to be supported on piles of wood. The park is free of high vegetation except for the magnificent tree tunnel that overlooks the bay. This space is mainly used for sports and the southern part houses a modern facility for greyhound races that have been held here since 1932: Wentworth Park Greyhounds (1987), with stands, buildings and kiosks. It is also used for football, rugby and community events.



Chinese Garden

Dragon Wall

Teahouse Pavilion





## Chinese Garden of Friendship

At the end of Darling Harbour, next to Chinatown, is the Chinese Garden of Friendship, opened in 1988. These gardens were a gift from China to Sydney, a symbol of friendship between the people of Guangzhou City, in the Guangdong province in the south of China, and the Australian city, and embodied in the Dragon Wall where the blue dragon represents Sydney and the brown dragon represents Guangdong. It is one of the few examples of traditional Chinese garden outside the Asian continent, entirely designed by Chinese landscapers and gardeners.

It manages to create the atmosphere of a magic and sacred place in the middle of the city, recreating the image of an ideal nature. The protagonists are water and stone, pillars of the aesthetics of oriental gardens, with strong symbolic and philosophical connotations. This sort of oasis, bounded by walls, contains lakes, waterfalls, streams, mountains and rocky forests.

The garden is dotted with galleries and pavilions of different sizes, including the traditional Teahouse Pavilion and the great pagoda located in the highest part on an artificial mountain of stones above the pond [40].

## Cremorne Reserve

The Cremorne Point coastal reserve is the closest to the Harbour Bridge on the north bank and is an example of survival in the face of varying development pressures, especially in such a visible and central location. The pointed Cremorne Point peninsula is a narrow wooded ridge, which defines two kilometers of almost parallel coastline between Shell Cove and Mosman Bay, with splendid views of the Opera House and Harbour Bridge.

The area was known as Wulworra-Jeung by the Cammeraygal, the Aborigines that were established on the northern shores of Port Jackson. In 1823, the Scottish watchmaker James Robertson obtained a concession of about 35 ha there and built a Georgian house. But the concessions of Aboriginal lands to the most significant settlers, made in the days of Governor Macquarie, when their potential commercial or strategic use for the port was not yet recognized, often led to disputes over lack of continuity of ownership. And when the son of James Milson bought the lands in 1850 a dispute with the government in relation to the use of the coastline arose.

The testimonies of the neighbors include the sequence of changes of use in the coastal strip, with words such as: birds, hut, fence, jetty, rowing boat, foundry, fair, rocks, picnic, recreation and ferry resonate. To address this, Milson called for the repeal of all public claims on the peninsula, but the government defended its public character and won the first lawsuit. Milson appealed to the Privy Council of London, but lost in 1895 and the English crown retained ownership, although the question of its use, always of general interest, but not necessarily as a park or reserve, remained open [35:152].

During those years, the government had conducted mining surveys at Cremorne Point, looking for coal, given the good results at the neighboring Bradfields Head. But there, the newly constituted Mosman town council held the beauty of the place as argument to object against a mine that would have destroyed an area that it intended to devote to residential, and not industrial or commercial, use. In Cremorne, on the contrary, the local deputy opposed the proposal of a new mine defending the access and public interest of the coastline, instead of its aesthetics, and arguing that the mine wanted to benefit from the low cost of a concession compared to the market price of the land.



Project from 1893 for a mining exploitation in Cremorne Point [Illustrate Sydney News, 2 dec 1893] [35:157]

The lawsuit was an important milestone in the defense of the public control of the banks of the port and helped to establish arguments against the pressure of the diverse private interests. The court ruled: *'No consideration in the nature of rent could afford any compensation or consolation for the disfigurement of the harbour,'* which was considered *'as the people's inheritance.'* For the first time, claims about beauty had defeated the demands of development in the port, *'one of nature's choicest masterpieces'* [35:157].

About nine hectares of the peninsula, adjacent to the shore, were saved from the real estate development of the interior and were leased to house the amusement park of Cremorne Garden (1856), named after the popular recreation area in London. This amusement park lasted only six years, but remained a popular place for strolls and vacations until the 1880s. In the 1920s, numerous buildings were built to house tourism, many of them destroyed and converted into apartments in the 1960s.

A coastal walk, more or less narrow, runs along the perimeter of the peninsula. Sometimes it widens with shrubby masses towards homes, such as in the Lex & Ruby Graham gardens, cascading towards the east coast, planted in the late 1950s, which are cataloged within the National Trust. The walk has its own access dock since 1911 and a small lighthouse located at Robertson Point, joined by a walkway to the shore. In its western part lies the Maccallum Seawater Pool (1920), a coastal pool initially called Shell Cove Rock Pool and promoted by the Olympic swimmer Frederick Lane, which since 1930 is property of the municipality of North Sydney.



Cremorne Reserve



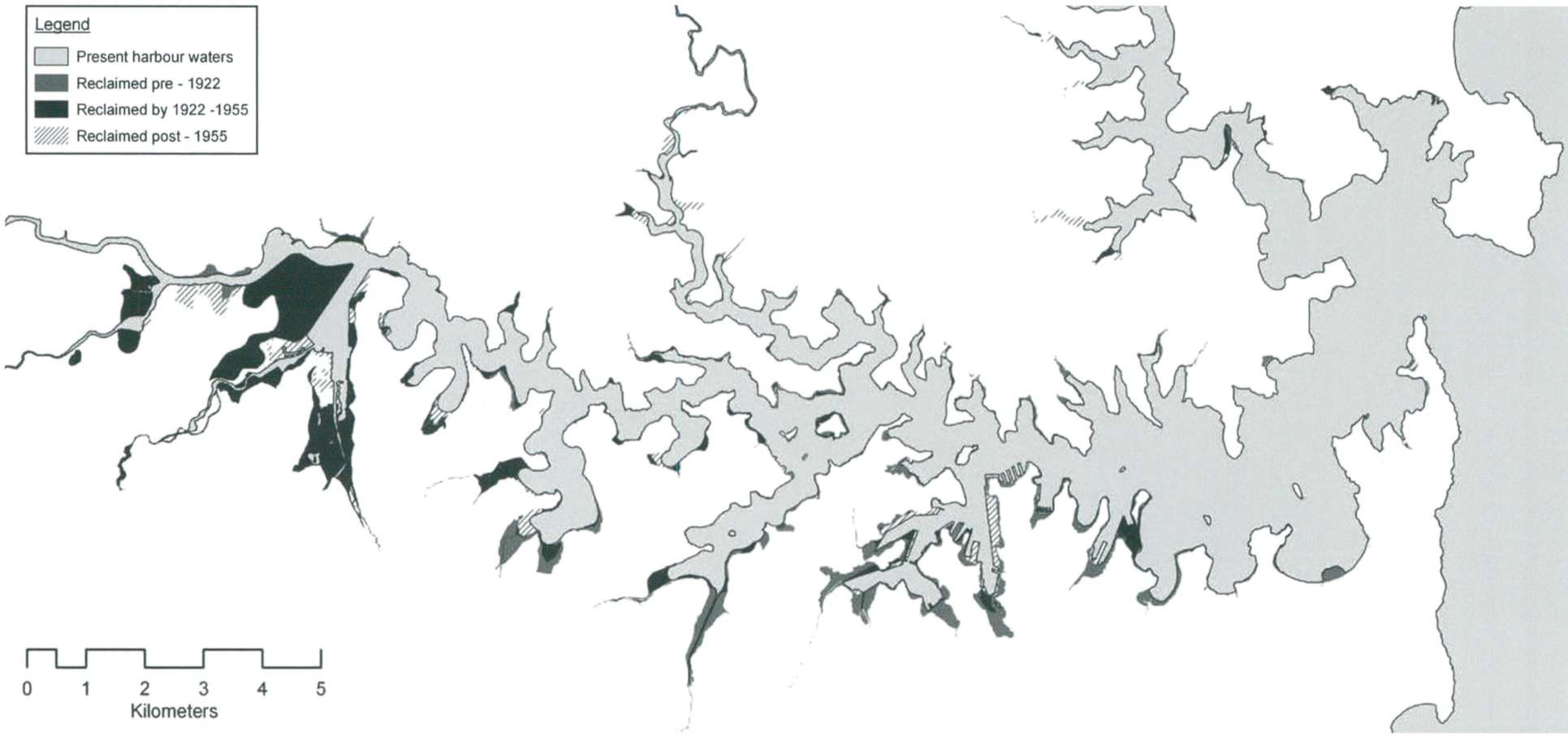
Robertson Point, Cremorne Reserve



Sydney Harbour from Cremorne Reserve



Residents building an ocean side swimming pool at Cremorne, Sydney, ca. 1920. Fairfax Corporation 1920. Courtesy of Fairfax Syndication, FXT289051, [nla.obj-163199018]




Landfills Sydney Bay before and after 1955 [5:362]

## Reclamation and Landfills in the Shore

In order to rebuild the coastline and adapt it to the inherent changes in maritime transport, ports often make landfills to gain land areas and dredgings to achieve sufficient depth. Likewise, modifications resulting from environmental restoration works, both to 'naturalize' the banks and to solve problems of flow and currents, need similar works. Since its discovery in 1788, the estuary or bay of Sydney has been modified in many occasions according to a wide variety of purposes, although most of the performances have been fillings, totaling about 1,135 ha, equivalent to 22 percent of the water surface, mostly made upstream of the Harbor Bridge [5:348].

The whole of these landfill, dredging and construction operations, which affect the tidal range or water level oscillation, comprise the activity currently called *'Reclamation.'* This type of action is inherent in the process of *inhabiting* the water's edge, regardless of the success or disaster of its outcome. In fact, when it comes to fixing any disastrous intervention, the recovery is also part of this activity.

Landfills in the Sydney estuary or the banks of the Parramatta River began as early as the construction of the city, but already in 1866, *the government agreed that reclaiming the harbour's foreshores was not the optimal approach to preserving the appearance and natural environment of the harbour's foreshores. Yet* —it added— *no practical injury is likely to result from the partial reclamation of heads and bays, if carried out with judgement and prudence.*[47] The consequences on hydrology, ecology and pollution have been scientifically established after the aesthetic ones, but they are already part of the good practices in force in any advanced country and in Australia since the Reclamation Act of 1930.

Dredging, for its part, has ensured the navigability of many areas of the port, subject to natural or artificial sedimentation processes. By the mid-1970s, the length of the coastline of the estuary had been reduced from 322 km to 245 km according to some estimates, or by one third according to others, while the sheet of water, including river courses and mangroves, had been reduced by 666 ha or a quarter of its surface before the arrival of the settlers.

The period of greatest fillings activity was from 1922 to 1955, with 570 ha of land adjacent to the Parramatta River in the Silverwater, Homebush Peninsula and Garden Island areas, as well as in Exile Bay, Kings Bay, Iron Cove, Glebe Island and Darling Harbour. During those years numerous parks and reserves were created on the shores, like Watt Park in Lavender Bay, Kurraba Point, Cremorne Reserve and Primrose Park. Filling activity continued in later years upstream of the Harbour Bridge along the river and its tributaries, albeit to a lesser extent. But after 1964, several berthing lines and large areas were set up for the new containers, which continued until the transfer of these activities to Botany Bay, and decreasing totally thereafter [5:361].















Coogee Beach

## Beaches and Parks: Bondi, Coogee

Coogee Beach and pier with summer crowd, 1929-1934. Hall & Co. Courtesy of State Library of NSW, Home and Away, hall_38436

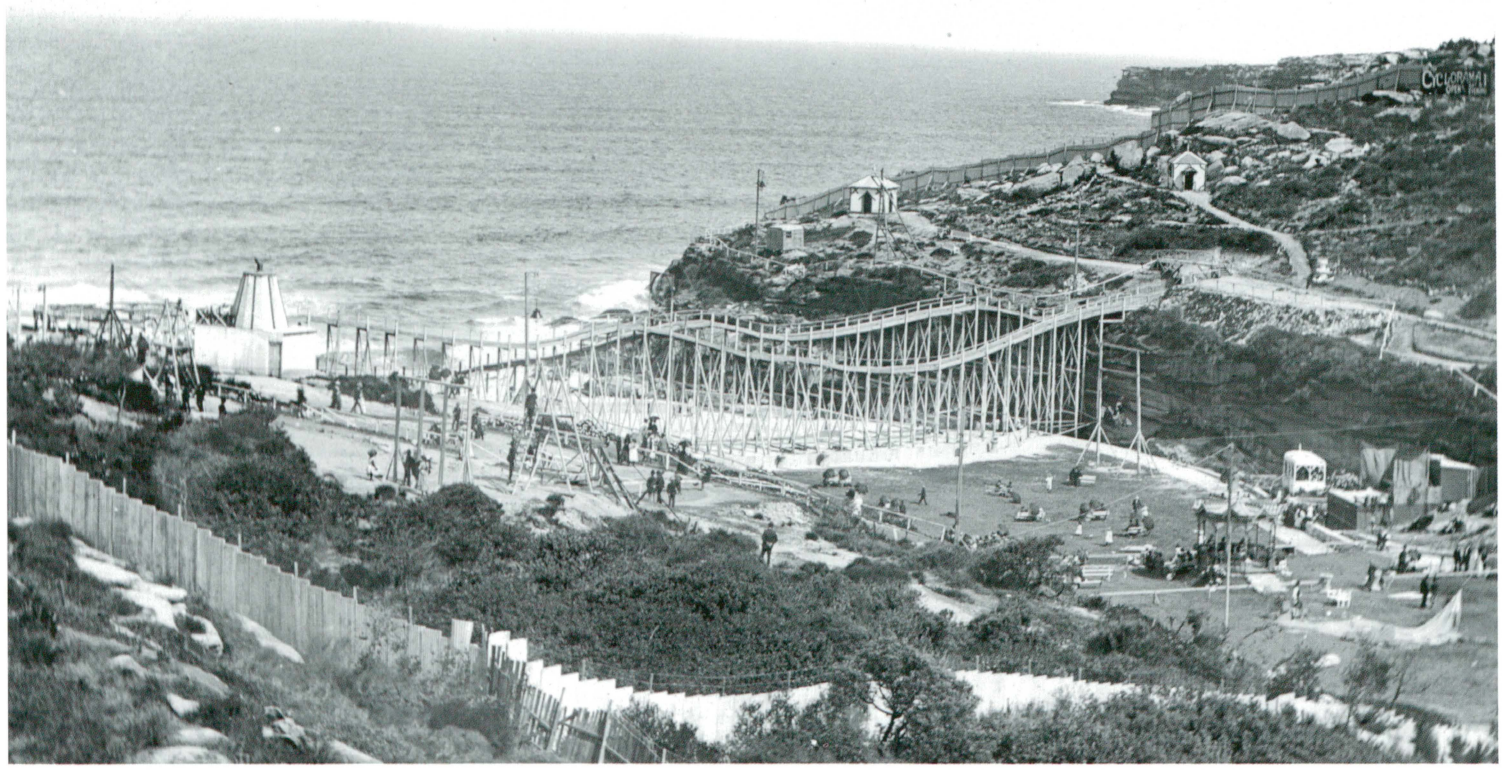
The beach, conceived as a place of entertainment par excellence, housed several amusement parks. The first of these open-air city parks was the *Bondi Aquarium*, located in Tamarama Bay, which operated from 1887 to 1891. It had a ballroom, an aquarium with several animals, swings, merry-go-rounds, shooting range, and a large wooden roller coaster, the *Switchback Railway,* on the beach and around the cliffs.

It underwent important repairs due to the great fire of 1891 and was bought in 1906 by the impresario William Anderson, who called it Wonderland City. It had its own steam plant and the country's first outdoor skating rink. Among its animals stood out the popular Alice, the elephant that walked the children throughout the park. Despite its more than 2,000 visitors on summer weekends, and the fact that it employed more than 160 people, the park closed in 1911.

In 1887 the *Coogee Palace Aquarium* was inaugurated, becoming the biggest attraction of the area. Conceived in the style of a Victorian palace complex on the English coast, it housed a pleasure garden, baths, a giant slide, children's attractions and a dance floor surrounded by tanks of exotic fish under a large central dome.

After a major storm in 1982 the dome collapsed, but was restored and the cataloged building was converted into stores and restaurants in 1987, now known as *Coogee Pavilion*. To complement this *English resort* a pier was added in 1924, with theater, ballroom, several restaurants, shops and a gameroom. In 1933 it was dismantled due to surfers' protests and at the moment only some of its pilings are preserved.





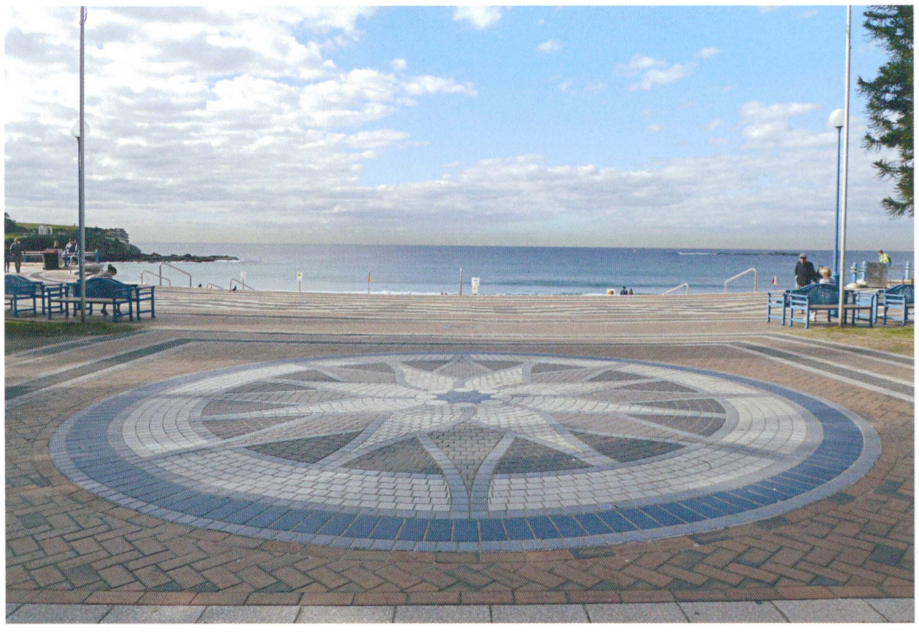

Bondi aquarium and grounds, Tamarama c. 1895. By Kerry & Co. Courtesy of National Library of Australia, vn4313064



Coogee Beach - looking north c.1890s. Photo shows Baden Baden. Courtesy of Mitchell Library, State Library of NSW, PXA 2113/ Box 67/ No. 14 [Neg FM1/5397]



Coogee Beach






The Children's Friend
Wonderland City Bondi,
1906-1911. Courtesy of
Waverley Image Library,
000/000841 - 4023

## Risks

All the beaches have large warning signs about the risks of bathing, asking the user to be aware that the surroundings and the sea and beach activities are dangerous. Summarized in six pictograms placed under that request there are warnings about the following risks: boat traffic, slippery surfaces, submerged rocks, deep sudden steps, recreational gadgets and sharks. When there are no lifeguards or services, the sentence is added: *No life saving services – Swim/Bathe at your own risk*.

As colophon, at the bottom of the sign are these three sentences:

> *Swimming/Bathing in open water is extremely dangerous.*
>
> *Swimming/Bathing in netted areas is advised, but may still be dangerous and is undertaken at your own risk.*
>
> *Children must be supervised at all times.*

Sharks, quite common on the east coast of Australia, are the biggest fear. At present, there is usually previous warning of their appearance, with enhanced precautions and even absolute prohibition of entering the water, depending on the cases. In December of 2015 the news even reached Spain, where a newspaper headlined: more than 60 sharks sighted in 48 hours on the east coast of Australia. And it went on to say that this year has witnessed 14 shark attacks, one of them fatal, and offered all kinds of details on schools of sharks of different species sighted in places off the coast of NSW.[48]

Manly Beach





High shot South Steyne, Manly, Sydney, NSW. Frank Hurley, 1910. Courtesy of National Library of Australia, nla.obj-160160671



Manly Coastal Walk



Manly Ocean Beach Promenade with the triple lineup of araucarias and the kiosk



Collins Beach, Manly

Manly Beach



## Wavesurfing, 1914

On the east coast of Australia, the remoteness of other coasts produces a fetch —or unobstructed length in certain wind directions— of thousands of miles and the wind can create very large waves. This happens with a greater or lesser intensity depending on the direction the beach is oriented, with greater incidence when the largest fetch is in normal direction to the beach.

Manly and Freshwater have been popular surfing spots for over a century, and have been the setting of numerous significant events in the history of surfing for decades. Here began 'body surfing' in Australia in the 1890s and 'board surfing' in 1909. The first surf lifeguard boat was launched at Manly in 1907 and Hawaiian surfer Duke Kahanamoku made a famous board surfing demonstration in 1914 on Freshwater Beach.

The first surfing world championships were held in Manly in 1964. Surfing spread all over the world and Manly and Freshwater surfers are famous. In a circular plaque located on the beach, there is the dedication of this place as a National Surf Reserve, which represents a fair recognition of its cultural importance:

Dedicated on Saturday, 25 September 2010

*Share, Care, Preserve*

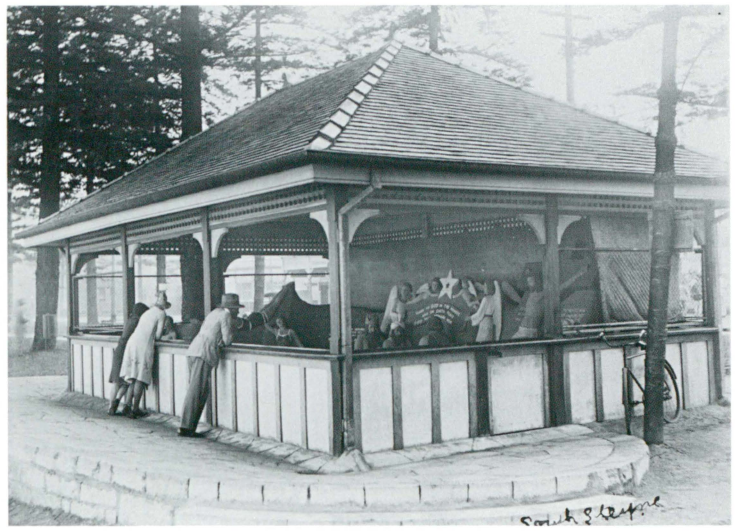
The Hon. Tony Kelly, Minister for Lands; Prof. Andrew Short OAM, National Surfing Reserves; Jean Hay AM, Mayor of Manly; Mike Baird, Member for Manly

National Surfing Reserve

[In a border at the edge of the circular plate]:

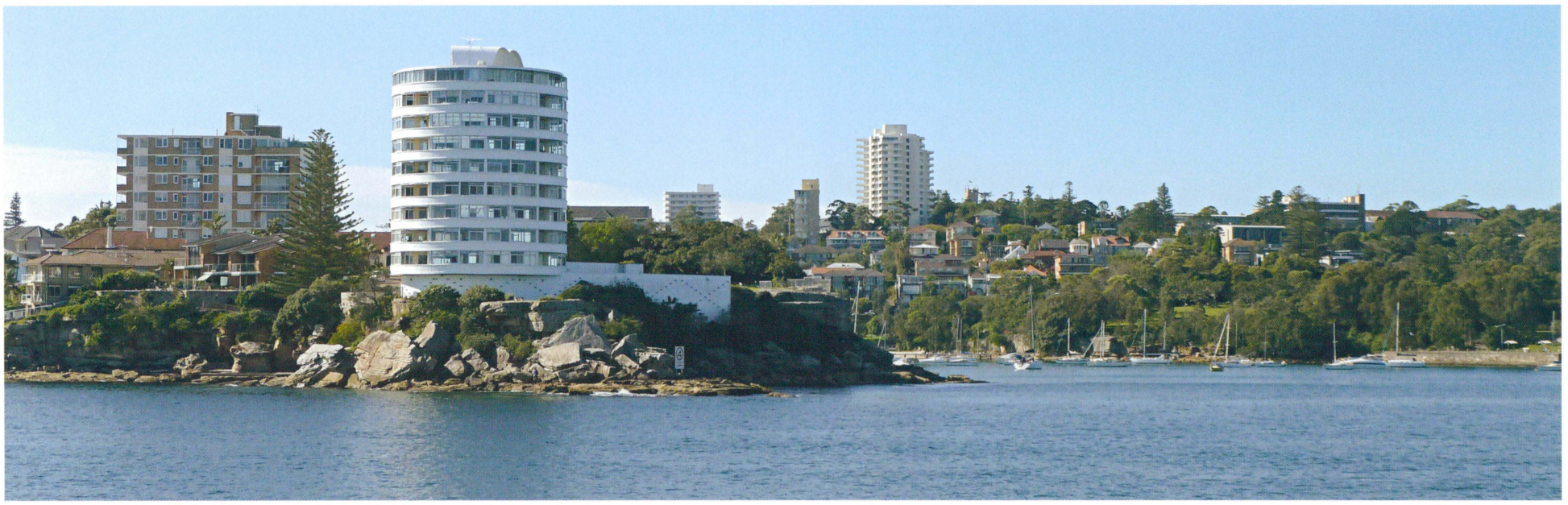
Freshwater, Queenscliff, North Steine, Manly, Fairy Bowei





Sandmodelling at Manly, by John Suchomlin, ca. 1929-1962. Courtesy of State Library of NSW, PXA 927 – Image 27

Manly Cove





The Corso, Manly




Manly Wharf




The Corso, Manly



Shelly Beach, Manly



Manly Cove




Manly Wharf

## Manly, Beach and Surf

One of the areas most linked to surfing are the beaches of Manly. This neighborhood was a small fishing village until 1852, when businessman Henry Gilbert Smith planned a tourist resort there, similar to that of Brighton in England. In 1855 a ferry pier was built and, from the 1880s, it became one of the favorite holiday and entertainment destinations. In 1915 the Corso was created, the avenue that, through the peninsula, connects the inner cove with the ocean beach, where the Steyne Hotel (Henry Gilbert Smith, 1859) and the New Brighton Hotel (1880, 1926) were located.

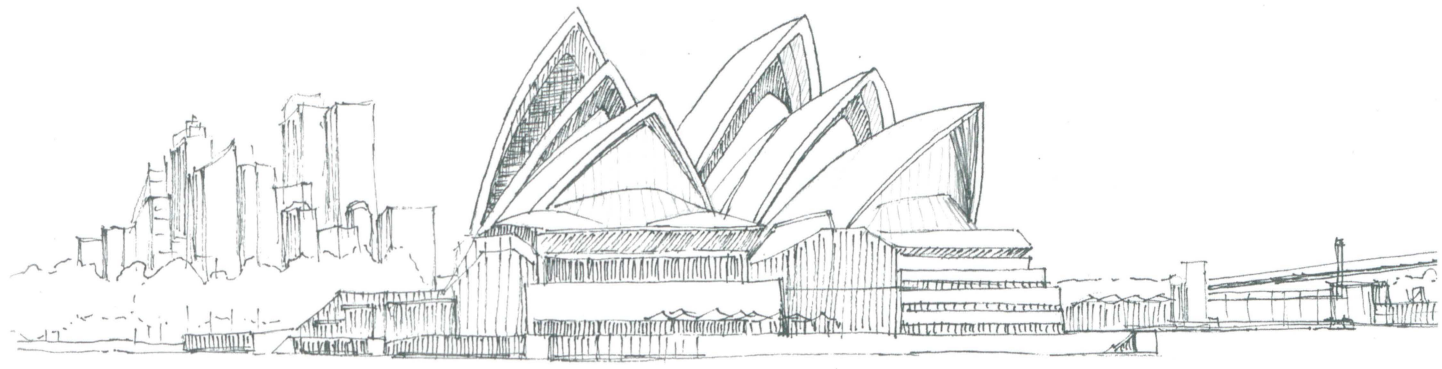
Manly Beach was known for its *surf carnivals* and for having the first lifeguard boat to patrol the beaches. In 1898 a walk was built to Fairy Bower on the sewer line to Cabbage Tree Bay.[49] The coastal front of Manly Beach is characterized by the triple lineup of araucarias,[50] two large groups planted by Henry Gilbert Smith in the 1850s and another in 1877 by Manly Town Hall. During the 1960s and 1970s, many specimens of araucarias died, in principle due to the surfactants of the sewer emissary in North Head, but were re-planted in 1991, after the emissary was transferred, with state and Commonwealth funds.

On this boardwalk you can still see the kiosk built in 1929 to house the great biblical motif sand sculptures made by John Suchomlin. In 1933 the district hospital proposed to reuse it as a wishing well, with a rock garden and a model of the hospital. People threw coins to see their wishes granted, which were collected to finance the institution for 40 years.



# 5 | Triumph of the Image

Modernity in Height / Limitations and Conquest of Height / Harry Seidler Brings Modernity / Rose Seidler House, 1950 / Australia Square, 1967, with Pier Luigi Nervi / Blues Point Tower, 1961 / Horizon Apartments Seidler, 1998 / MLC Centre (Seidler, 1987) / Skyscrapers in the Downtown / Sydney Tower, Donald Crone, 1981 / Threats, Disdain and Defense of Heritage / Sirius Building, 1980s / Unions Boycott the Demolition / Sydney Harbour Control Tower, 1974 / Aesthetic and Interpretive Reasons / Darling Harbour / Protests in Barangaroo / King Street Wharf - Darling Harbour / Difficult Entrance to a Trivial Design / Maritime Character on the Other Shore / National Maritime Museum / Parramatta Towers / Living Far and Getting Home / American Influence / Australian Way of Life / Visibility of the Water / Most Expensive Houses on the Waterfront / Suburbs and Access to the Downtown / Nuances and Rectifications / Roads and Bridges / Cahill Expressway, 1959 / Vandalism in the Domain / Gladesville Bridge, 1964 / Anzac Bridge, 1995 / Opera House, Utzon 1973 / The Location, the Architect and the Project / The Podium and the Cover / The Construction of the Place / Shapes Difficult to Build / Cladding of the Roof / Structure of the Shells / A Manual Process, Slow and Expensive / An Anachronistic Consideration / Difficulties during Construction / From the Landscape to the Image with the Bridge / The Opera and the Bridge Were Never Rivals / The Opera Unifies the Whole as Landscape / Its Image Brings Together the Whole Harbor / Symbol of the City and the C ountry / From Symbol to Meaning / The Repressed Memory / The Shore for the People / From Commercial Use to Public Space / A Bay for Leisure and Protection / Rehabilitated Woolloomooloo Finger Wharf / Industrial and Labor Memory / Rejection, Boycott and Reversal / Excellent Rehabilitation / Future Meanings / Transfer of the Harbor to Botany Bay / Sydney International Airport, 1970 / Bankstown Airport / Interscan / Residential Marinas in Oyster Bay / Environmental Protection / Protection of the Visual Landscape / Coastal Walks and Reserves / Water Recycling / The Entrance to the Bay / Walks from Light to Light / Taronga Zoo / The Visual Landscape of the Bay / Accounts of a Journey / Landscapes and Contrasts of the Event / Execution in Front of the Crowd / Harbour Bridge Inauguration / Sydney – Hobart Regatta / End of the Year, End of the Millennium / Sydney Olympic Park, 2000 / Diner en Blanc / Open Air Weddings / Mardi Gras Parade / Keep Sydney Open / Touristy Landscapes / Souvenirs and Activities / Harbour Bridge Climb / Sydney at the Movies / Sydney and NSW Films / Scenes / Impossible Landscapes / Contrasts of Character / A Contradictory Imaginary / Sydney in Australia



Opera House. PHL, 2016

## Modernity in Height

### Limitations and Conquest of Height

In 1888, only three towers stood out above the six-story maximum of the Sydney skyline: Town Hall, Lands Department Building and General Post Office. Later towers office and apartment blocks began to emerge in a series of stages. In 1912, when the 12 floors of the Curulla Towers at King St with Castlereigh St were being completed, a height limit of 45 m (100 ft) was established for new buildings, which was maintained until 1957 [53:27].

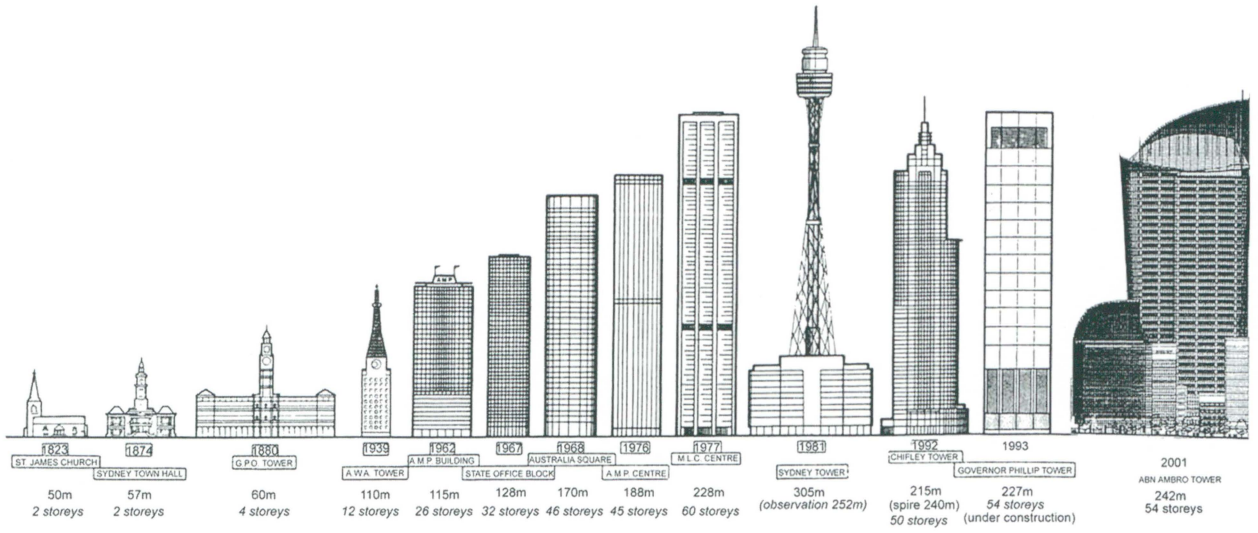
Only exceptional elements went above this height, such as the communications antenna of the AWA Building, built with a metal lattice inspired by the iso-resistant forms of the John Smeaton lighthouse or the profile of the Sazilly gravity dams, or the inevitable Eiffel Tower.

The AWA Building was a landmark of modernity, housing the new radio and communications technology industries. Completed in 1939, it is 47 meters high and, with the communications tower, was the tallest structure in Sydney for more than 20 years. Although it could not equal the height of the New York skyscrapers of the time, its elegant appearance radically changed the urban landscape. As this and other buildings of the time suggest, Sydney was gradually leaving aside European influences, to sign on to American ones [41:259].

The building proper is interesting for the expressionist composition of its brick factories and the texture of drawn contrasts obtained with highlights and rips. In a relief of the antenna pedestal, a winged Pegasus jumps over a line of waves, with the clear message about the emitted waves that surpass the seas to communicate with the boats. Above and somewhat relegated, another brick panel of different texture shows the mark of the society, in the form of a circle with the three letters inscribed inside. At the height of the center of the circle, a horizontal border of brick marked by lines of shadow surrounds the whole pedestal, saving its interior.

### Harry Seidler Brings Modernity

Modernity came to Sydney by the hand of Harry Seidler (1923-2006). Born in Vienna, he escaped Nazism via England, Canada and the United States, before settling in Sydney in 1948. He was part of a generation of immigrants to Australia, responsible for the internationalization of the British colony. No other architect has had such a great impact in Sydney, both for his own work and for his influence on his colleagues. The generous public spaces of his office towers created different urban possibilities, and he also brought a new architectural quality in his houses and apartments.









High rises in Sydney-Punter 2005-22

Central Business District from Taronga Zoo

AWA Tower

However, Seidler's modernity entered through the back door, in the form of single-family dwelling in the countryside. His first project in Sydney was the Rose Seidler house, the family home where his parents Rose and Max lived, which was hugely successful and remains the most well-known 20th century house in Australia.

Although Harry Seidler's modernism was generated by his experiences in Europe and the United States, Sydney's environment and culture also informed his work and his generous patronage of the arts. In spite of being considered a doctrinaire modernist, Seidler adjusted much of his work to the climate and the topography of Sydney. Some of his best buildings — Blue Point Tower and Australian Square, to



## Rose Seidler House, 1950

In 1950 Harry Seidler built the Rose Seidler House for his parents, Rose and Max Seidler, on behalf of his mother, who encouraged him to come from New York to settle down to work in Sydney. Located in the suburb of Wahroonga on the north side of the city, it is surrounded by a garden with native vegetation and rocky outcrops with spectacular views of the Kuring-gai National Park. To take advantage of the panorama, Seidler arranged large glass cloths and a covered terrace, looking for the maximum interior-exterior space interaction. By day, these large windows are green landscape planes forming part of the whole composition and, at night, the darkness reflects the interior or they are covered with curtains creating a totally different effect.

There is a succession of different planes and open spaces, related in a spatial continuum, that emphasizes the tensions and the contrast between the cubic architecture of straight lines and the natural free forms of the surroundings. Its area of 200 $m^2$ is distributed over two square floors, the lower one with the garage, a room and the access ladder; and the upper one is divided into the day area — kitchen, dining room, living room — and the night — bedrooms and bathrooms — separated by stairs, terrace and a small game room with direct access to the open air. The terrace of the living room has direct access from the garden through a ramp of great plasticity in the volumetric composition of the building. The dining room and the kitchen have a direct exit to the outside and close by is located a clothesline space in a service area. There still remains part of the garden planted by Rose Seidler with exotic species, flowers, fruit trees and an orchard. She was also the author of the garden's stone walls, made with the remains of the excavation for the garage.

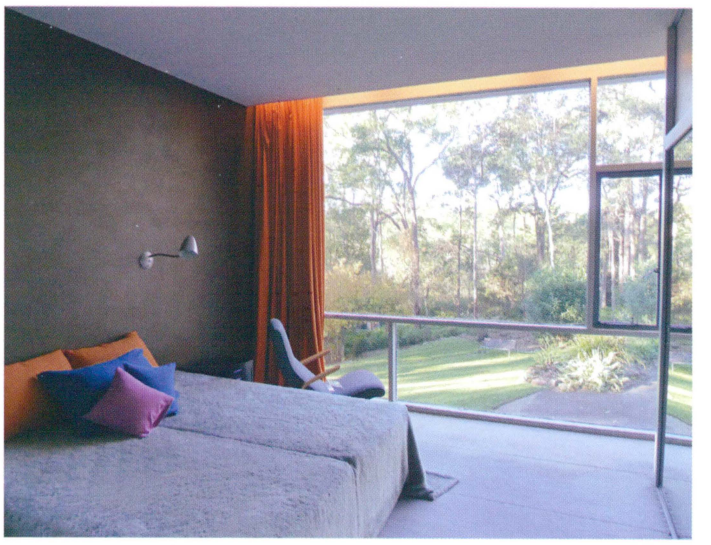
When it was built, the house was very controversial for its modern and futuristic style for the time (clear interior, light furniture, easy to clean surfaces), being the first Australian house that reflected the Bauhaus principles mixing architecture, art and technology. People came to see this "gadget" and peered through the windows, forcing the owners to leave the house.[51] It was the winner of the Sir John Sulman Medal in 1951, and is currently the main icon of modernity in the city. Its success encouraged Seidler to stay in Sydney, and its functional and flexible design for modern life would serve as a precedent and model for later works.

Seidler made several residences and commercial buildings with new ideas and constructive techniques, becoming a reference for modern Australian architecture. With the death of its owner in 1967 and the other owner's move to a residence, the house passed through several tenants and underwent several changes until its donation to the State in 1988. It was restored according to the original aesthetic and colors —influence of his teacher Josef Albers—, and has one of the most important post-World War II furniture collections; many of the original pieces were bought by Seidler himself in New York and others were commissioned directly by him for this residence.[52]











Australia Square, 1967









Blues Point Tower (1961)

mention two of them — were also the most controversial. As a polemicist Seidler always remained firm and Sydney's urban culture benefited greatly from his disdain for design and second-rate decision making: he always asked for the best.[53]

His most significant work in the city was Australia Square, the first concrete skyscraper in the country, made with engineer Pier Luigi Nervi, in whose Rome studio Seidler spent several weeks. Built in 1967, this 50-story building was taken as a guideline and completely changed the Central Business District and the image of the city. With a very radical circular design, it was the tallest and lightest concrete building in the world.

**Australia Square, 1967, with Pier Luigi Nervi**

In addition to its urban importance, Australia Square is another of the projects where Seidler established a dialogue between art and architecture. On behalf of promoter Gerardus (Dick) Dusseldorp, Seidler traveled around the world in 1966 to find works of art for Australia Square. He visited several renowned 20th century artists such as Henry Moore, Isamu Noguchi and Alexander Calder, from whom he commissioned the Crossed Blades metal sculpture located on the outer porch of the building. For the interior he bought tapestries by Joan Miró, a sculpture by Norman Carlberg, several works by the Australian John Olsen and two works by Le Corbusier and Victor Vasarely, later replaced by a mural by Sol LeWitt in 2002.[54]

With its 25 floors and built by Seidler in 1962, Blues Point Tower is *often regarded as one of the ugliest buildings in Sydney,* according to Wikipedia. It is also rated by Susan King as one of Sydney's most hated buildings [41:271]. This harsh pedigree results not only from its 83 m height, but also from the visual impact it produces.

**Blues Point Tower, 1961**

Since its construction was approved, the Blues Point Tower has faced a wave of protests due to its size, position and shape, and has the unenviable reputation as the most hated building in Sydney. Whenever a list of Sydney's ugliest buildings is compiled, Blues Point Tower inevitably gets the highest score, and every few years someone calls officially for it to be knocked down. For many years, insulting it or joking about its possible demolition was a favorite dinner pastime.

Although since its inclusion in the patrimonial register in 1993 it has generally been respected, it is often cited as an example of a structure inappropriate for its environmental context. Its 144 apartments have a superb view over the Parramatta River or the Harbour Bridge, given its position almost exactly coincident with the central axis of its great span. But, conversely, it is seen from all sides in the very center of the bridge, cutting its silhouette in two from afar or as if it were a crutch from closer by.

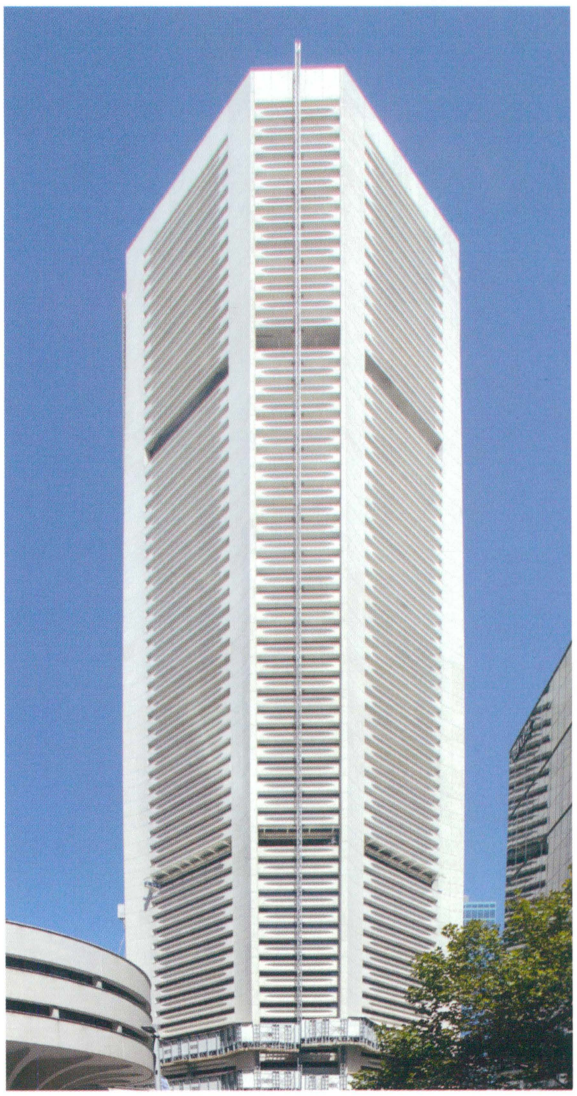
Seidler, however, always considered it as one of his best buildings, and argued that he stands by that.[55]

On the west side of Clapton Place with an entrance on 184 Forbes Street rise the 43 floors of Horizon Apartments, also built by Harry Seidler in 1998. Like Blues Point, the Horizon tower was a controversial development for its height, considered inadequate for the surrounding urban landscape, and the shadow effects of its 144 m height, always important in Sydney [41:271].

In 1987 it was surpassed by the MLC Center at King and Castlereagh Streets, where previously the Australia Hotel was. Designed by Harry Seidler, it has an octagonal floor plan, with a central concrete core structure and eight 68-story facade pillars,

MLC Centre

Dr. Chau Chak Wing Building,
(Frank Gehry, 2012-2014)
in The Goods Line







Sirius Building

which rises 232 m above the street. When it opened it was the tallest concrete building in the world and the tallest building outside of the United States.

The construction of these skyscrapers in the center of the city generated a strong increase in land prices, that directly threatened the continuity of Sydney's old buildings. Their management used to be conflictual because the demolition of buildings of historical interest, whose use was far from the payment capacity of possible new users of new towers, was frequently required. These threats mobilize patrimonial defense movements, which sometimes win and others lose the battle.

## Threats, Disdain and Defense of Heritage

To these inherent difficulties one must add in Sydney the complications inherent in its historical memory, full of stories of pain and punishment, but often converted into easy recreation of the past merchandise for tourists. This way of consuming national history through tourism was always very popular and, since the end of the nineteenth century, the tourism of convicts and aborigines have been activities demanded by visitors and continue to be so today. The defense of cultural property related to them always worked well, but when it comes to buildings and public works whose value comes from the qualities of their construction, the debate is complicated and the defense movements have to increase pressure.

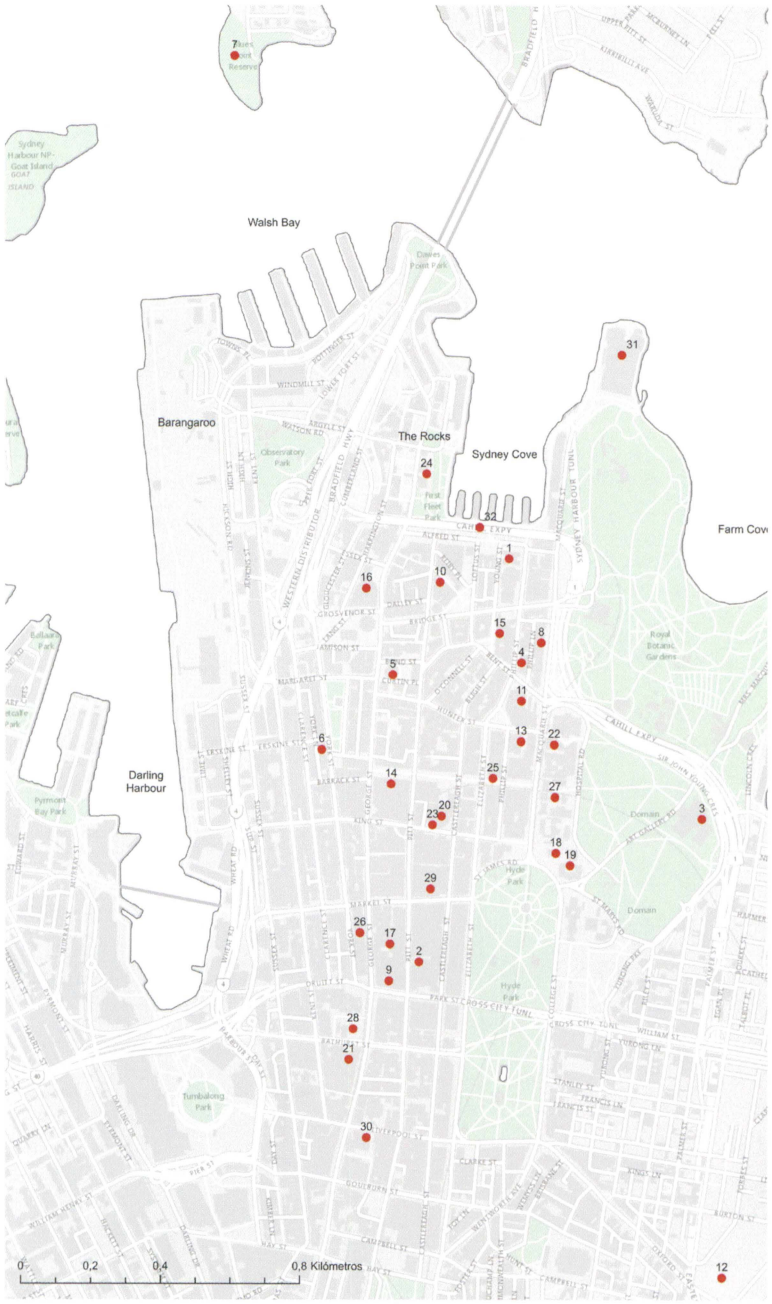
## Sirius Building, 1980s

A building of the 1980s threatened with destruction is the Sirius Building, a staggered concrete building with a somewhat brutalist air, located next to the southern access to the Sydney Harbour Bridge in a somewhat hidden position. This demolition attempt

## Skyscrapers in the Downtown

| Year | Building | Location | Architect | Engineer | Ht m | Fl. |
|---|---|---|---|---|---|---|
| 1961 | AMP Building | Circular Quay | Peddle Thorpe & Walker | Rankine and Hill | 117 | 31 |
| 1963 | Commercial Union Blg | 109 Pitt St | Rudder Littlemore & Rudder | Civil & Civic | 67 | 21 |
| 1963 | Commonwealth Centre | Chifley Square | Commonwealth Dept Works | Commonwealth Dept Works | 84 | 21 |
| 1964 | IBM Building | Kent St | Stephenson & Turner | Rankine and Hill | 82 | 22 |
| 1965 | ANZ Bank | Pitt & Hunter Sts | Roseland & Gillings | ANZ Bank | 80 | 26 |
| 1965 | Citra House | Macquarie St & Circular Quay | Rudder Littlemore & Rudder | Gutteridge Haskins & Davey | 81 | 20 |
| 1965 | Water Board Blg | Bathurst & Pitt Sts | McConnel, Smith & Johnson | Woolacott, Hale, Bond & Corlett | 101 | 24 |
| 1966 | State Office Block | Phillip & Bent Sts | Government Architect | Taylor, Thomson & Whitting | 128 | 35 |
| 1968 | Park Regis | Park & Castlereagh Sts | Stocks & Holdings | Mateffy & Perl, J Stigler | 140 | 50 |
| 1968 | Australia Square | 270 George St | Harry Seidler | Civil & Civic | 157 | 45 |
| 1970 | Goodsell Building | Hunter & Elizabeth Sts | Government Architect | Stanley, Llewellyn & Whitten | 75 | 20 |
| 1972 | Central Square | Castlereagh & Hay Sts | Fox & Associates | Miller, Milston and Ferris | 80 | 23 |
| 1973 | No 1 Chandos St | St Leonards | Fombertaux | Taylor, Thomson & Whitting | 70 | 16 |
| 1974 | Hilton Hotel | 255 Pitt St | Kolas & Bryant | Rankine and Hill | 132 | 40 |
| 1976 | Colonial Mutual Blg | Pttt St & Martin Place | Joseland & Gillings | Docker and Smith | 80 | 21 |
| 1976 | Town Hall House | Kent & Druitt Sts | Ancher, Mortlock & Partners | Ove Arup and Partners | 114 | 30 |
| 1976 | AMP Centre | 25 Bridge St | Peddle Thorpe & Walker | Rankine and Hill | 187 | 50 |
| 1978 | NSWIT Building | Broadway | Government Architect | Bond, James and Laron | 122 | 32 |
| 1978 | Hyde Park Tower | Elizabeth & Park Sts | Kann Finch & Partners | Rankine & Hill | 165 | 40 |
| 1978 | MLC Centre | Castlereagh St & Martin Place | Harry Seidler | Civil & Civic, Lehmann and Tally | 244 | 68 |
| 1979 | Exchange Centre | Pitt and Bond Sts | Peddle Thorpe & Walker | Taylor Thomson & Whitting | 118 | 32 |
| 1982 | Qantas Int'l Centre | George & Lang Sts | Joseland & Gillings | Miller, Milston and Ferris | 190 | 50 |
| 1988 | Grosvenor Place | George & Harrington Sts | Harry Seidler & Davis, Heather & Dysart | Ove Arup & Partners | 180 | 50 |
| 1992 | Chifley Tower | Macquarie St | Kohn Pederson Fox & Associates | WSP Flack + Kurtz | 241 | 53 |
| 1993 | Governor Phillip Tower | 1 Farrer Place | Denton Corker Marshall | Ove Arup & Partners | 227 | 54 |
| 2000 | Citigroup Centre | Park St. | Crone and Associates | Hyder Consulting | 243 | 50 |
| 2001 | ABN Amro Tower (Aurora Place) | Macquarie St | Renzo Piano | Ove Arup & Partners | 219 | 41 |
| 2004 | Meriton World Tower | 91 Liverpool St | Nation Fender Katsalidis | Connell Mott MacDonald | 230 | 73 |
| 2004 | Ernst & Young Tower at Latitude | George St. Goulburn St. | Greg Crone | Hyder Consulting | 222 | 45 |
| 2005 | Deutche Bank | 126 Phillip St. | Norman Foster and Partners | Ove Arup & Partners | 239 | 39 |
| 2007 | Lumiere Residence | Bathurst St. | Norman Foster y PTW Architects | Taylor, Thomson & Whitting | 151 | 47 |
| 2013 | ANZ tower | Castlereagh St. | Francis-Jones Morehen Tharp (FJMT) | Laing O´Rourke and Enstrust | 195 | 46 |

Source: [13:240] and original elaboration

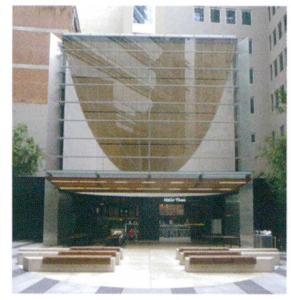



1. AMP Building
2. ANZ Tower
3. Art gallery
4. Aurora Place
5. Australian square Building
6.AWA Building
7. Blue Point Tower
8. BMA House
9. Citigroup Centre
10. Custom House Bar
11. Chifley Tower
12. Darlinghurst Gao
12. Deutche Bank
13. General post -The Westin
14. Governor Philip Tower
15. Grosvenor Place
16. Hilton Hotel
17. Hyde Park Barracks
18. Land Department Bg
19. Longchamp MLC
20. Lumiere Residence
21. Miychell Library
22. MLC Center
23. Museum of Contemporary Art
24. Old Colonial Mutual Life
25. Queen Victoria Building
26. Rum Hospital
27. St Andrew's Cathedrall
28. Sydney Tower
29. World Tower
31. Opera House
32. Circular Quay



Emirates Building


Sydney Towers CBD


ANZ Tower


Skyscrapers from Sydney Tower


Skyscrapers from Australia Square


Skyscrapers from The Domain


Skyline from Royal Botanic Garden



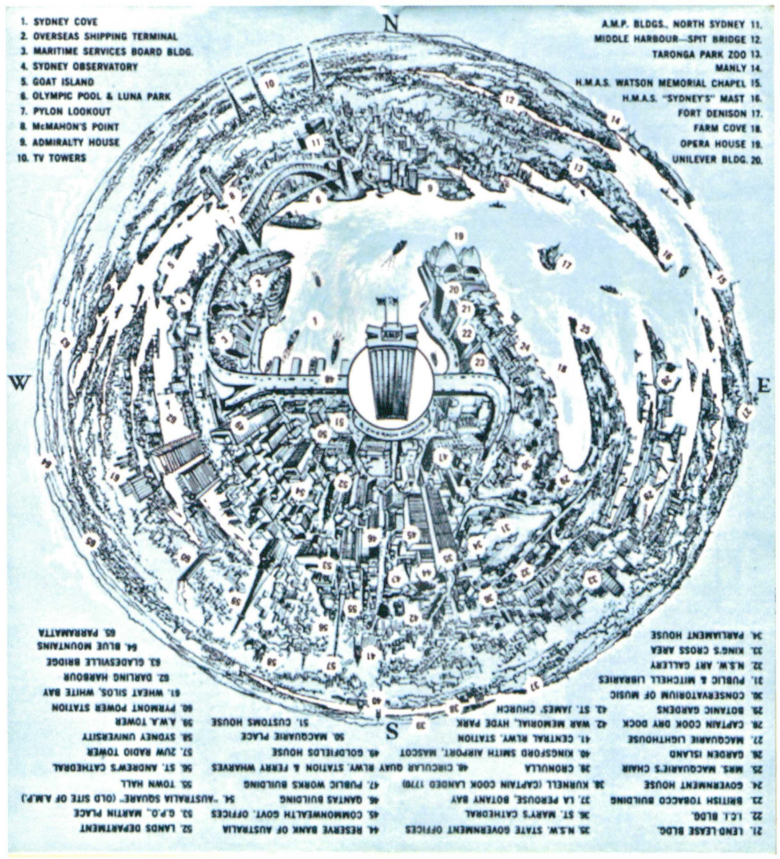

## Sidney Tower, Donald Crone, 1981

Sydney Tower rises in the middle of the Central Business District (CBD), like a gigantic mushroom in a forest of towers and skyscrapers. Its height of 309 m can be broken down into four parts: a parallelepipedic base, indistinguishable from any other CBD building, about ten stories high; a shaft formed by a cylindrical tube of about 180 m height and 6.8 m diameter, supported by tens of inclined steel cables that form a hyperbolic paraboloid surrounding the building; an eight-storey upper turret of metal structure in the shape of an inverted cone trunk, with a cylinder above, built on the building and lifted simultaneously with the central tube; and a crown mast of about 15 m, also bundled by cables to the turret.

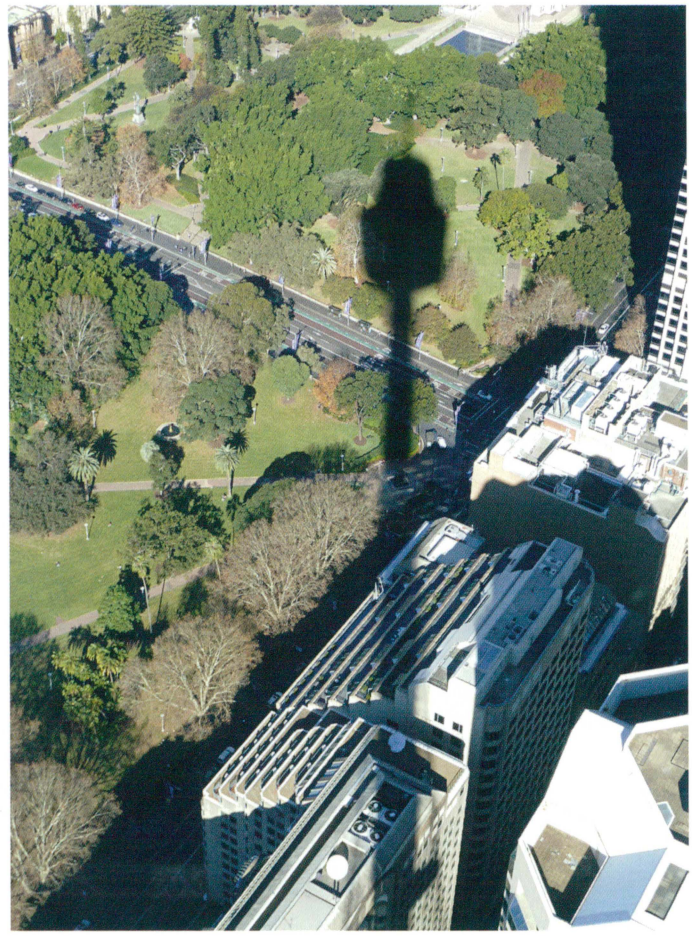
Being an observatory of the city it must surpass the height of the other skyscrapers, although it is not known for how long, and in consequence it is in turn seen from a great part of the urban area, over which it reigns like a landmark.

On account of its shape and its use mainly by tourists, it is not experienced as a building or skyscraper, but like an artifact inserted in the city. Perhaps that particular design would make more sense outside the CBD, where it would be something more of its own, leaving the function of looking around from within the city to the upper floors of other skyscrapers.

In fact there are many other bars and restaurants on high floors scattered throughout the city and two of them are especially liked and recommended by the neighbors themselves. One is the exquisite, 47-floor rotating lounge on Seidler's Australia Square, which also has an observation deck on the 48th floor. The other is 107 m high on the 26th floor of the AMP Building, Sydney's first skyscraper Built in 1966 by Peddle Thorpe & Walker. Its advertising brochure explains that it is 30 m higher than the pylons of the Harbour Bridge, while naming what is seen from there as Spherical Sydney.




Spherical Sydney [Nota [56]] A holiday gift from Mirror Sydney – Sydney as a bauble. At the centre is the AMP tower, built in 1962





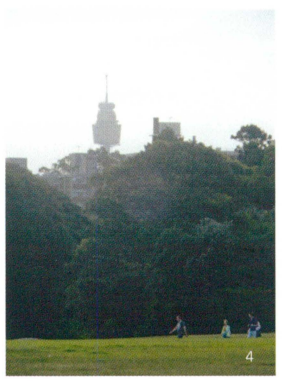

Westfield
westfield.com.au
TAG
HEUER








2



4



5



3




6

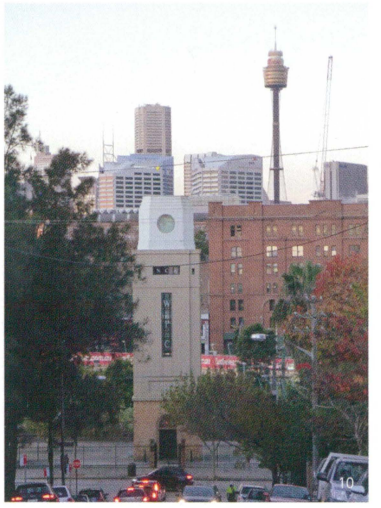
Sydney Tower from different locations in the city:

1. Darling Harbour, 2. Sydney Harbour, 3. The University of Sydney, 4. Centennial Park, 5. Watson Bay, 6. Sydney Harbour Bridge, 7. Royal Botanic Garden, 8. The Domain, 9. Wentworth Park, 10. Glebe, 11. Hyde Park, 12. Taronga Zoo, 13. Woolloomooloo


7




9


10


11


12


13

has unleashed an interesting debate on the provenance of overturning historic buildings of a certain significance for the city, based on their aesthetic qualities.

The Sirius Building was built specifically to relocate tenants expelled from their homes by the 1960s port remodeling. Most tenants have moved in and there are several plans under way to build new apartments, with views and prices valued at millions of dollars. At the end of September 2016 only one tenant remains in the building, and the rest is closed up.

The National Trust director, Graham Quint, stated on 27 September 2015 about the need to protect this type of buildings: *They're dramatic and they're meant to make a statement. I don't know whether beautiful would be the word, but not everything's meant to be beautiful... Far from blocking views of the harbour, it [the Sirius building] actually 'steps down' to reveal a wide sweep of Sydney. And he added: any replacement could be even bigger.*[57]

**Unions Boycott the Demolition**

More recently, Elizabeth Farrely wrote in the Sydney Morning Herald (SMH) on 8.6.2016 that the Sirius Building, designed by Tao Gofers, is now a cult classic revered by architects and historians from around the world (as well as by all experts in this country), and is within the brutalist tradition: *but it is not brutal. Far from it. What's brutal is the idea that this fine work —custom-fitted to its inhabitants, miraculously giving the poor and the frail some of Sydney's best views— is really just a site.*[58]

However, the patrimonial protection requested by the National Trust in 2015 was also denied by the Heritage Minister. Public support is notable and coordinated by the Save Our Sirius Foundation, which is composed of the National Trust, the Australian Institute of Architects, Millers Point Residents Action Group, Friends of Millers Point, Millers Point Public Housing Tenants Group , NSW Unions, CFMEU, and Jack Mundey, star of The Rocks' rescue and remodeling in the 1970s. NSU's Australian Institute of Architects president Shaun Carter is the chairman of the SOS Foundation.

According to the Daily Telegraph, Sydney's own Mayor Clover Moore supports SOS and, in the company of union leader Jack Mundey, announced on 9.14.2016 that NSW and CFMEU unions have stated that *no company associated with either union will be involved with the demolition process, with the threat of the site being picketed if any work goes ahead.*[59]

**Sydney Harbour Control Tower, 1974**

Also threatened with demolition is the port control tower, built to monitor ship movements inside and outside Port Jackson, by means of its direct view of Sydney's main docks. It started operating in 1974, after the conversion of Darling Harbour's fingers into RoRo (roll-on / roll-off) container terminals.

It consists of a column of reinforced concrete of 87 m above sea level, crowned by the observation and operation areas made of stainless steel and glass, and cemented on a disc of reinforced concrete of 7.6 m in diameter and 2.9 m thick, anchored in the rock. The upper three floors are 10 m in diameter, constructed in cantilever from the shaft and the roof is 15.2 m in diameter.

The tower became redundant in 2011, when ship control services were transferred to a new system installed in Port Botany which includes six radars and nine CCTV cameras, and oversees the ports of Sydney and Botany simultaneously.

In May 2014, the National Trust was informed that the Sydney Harbour Control Tower was to be demolished and requested its protection as a patrimonial element, citing a series of arguments about its significance and representativeness for the maritime operation of the port of Sydney, as well as certain technical values of its design and construction. The Heritage Minister decided not to include the tower in the *State Heritage Register.*

## Aesthetic and Interpretive Reasons

The reasons given for its demolition are aesthetic and environmental, in that it is a case of ensuring that the proposed environmental reserve has a more natural appearance and character, in accordance with the conceptual plan of the site. There was intention to replace the tower with a historical interpretive exhibition, but the plan unleashed popular opposition.

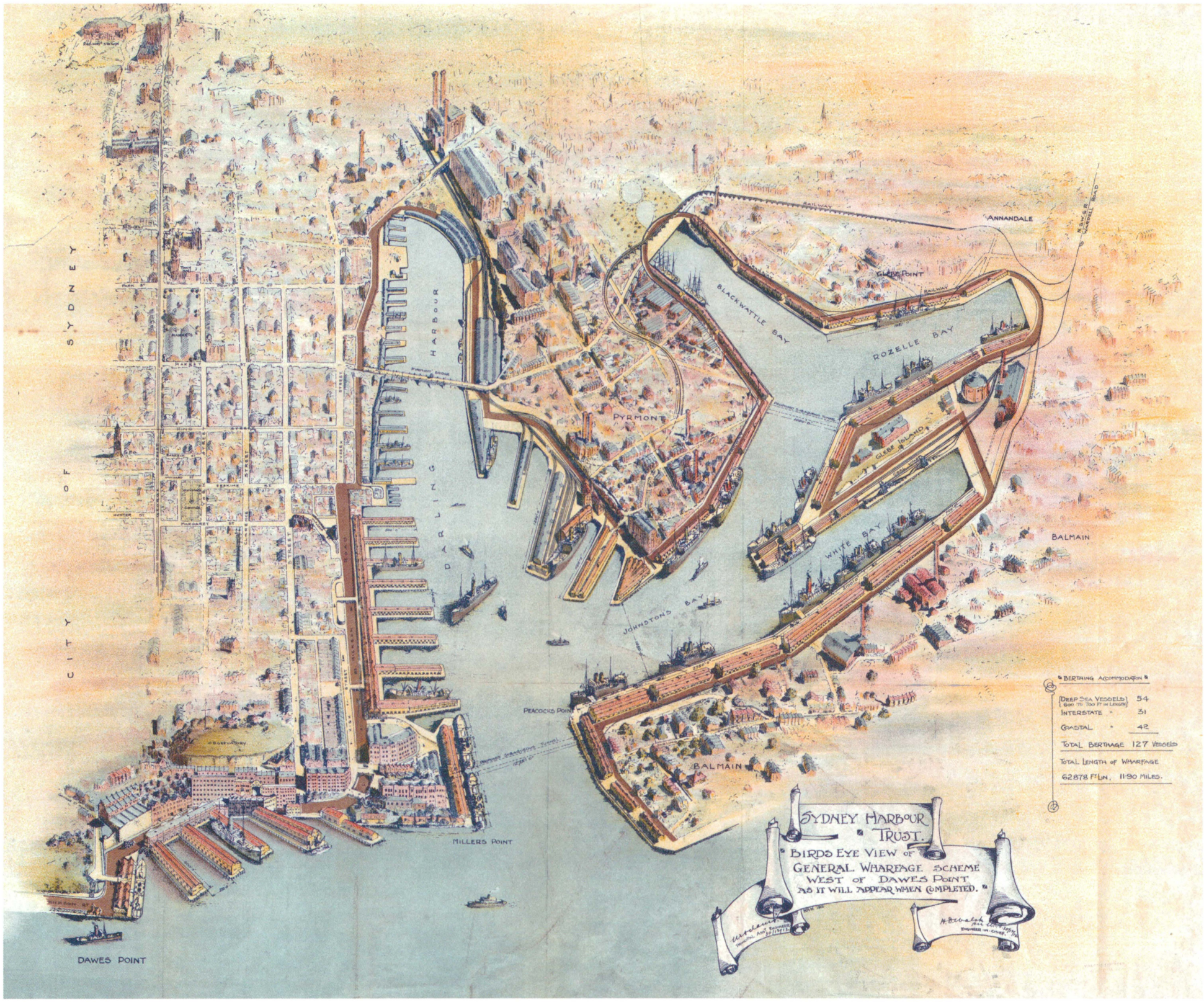


Cookle Bay in Darling Harbour

South Steyne Steam Ship in Cookle Bay

## Darling Harbour

From the earliest days of the colony, Darling Harbour was a crucial part of the commercial port of the city. The traces of its industrial history have been erased as completely as those of its previous Aboriginal inhabitants. In the years prior to




Lithograph, Bird's eye view of general wharfage scheme west of Dawes Point as it will appear when completed / Sydney Harbour Trust ; H.D. Walsh Engineer-in-chief 30/12/12 ; W. Adams, Principal asst. engineer 30/12/12 ; W.H.W. 1912. Sydney: McCarron, Stewart & Co., Printers and lithographers, 22-24-26 Goulburn St., 1912. Courtesy of National Library of Australia, nla.obj-232418156

1988, the southern tip of Darling Harbour and the west coast, formerly Railway Goods territory, were erased to build a new set of buildings to mark the Sydney bicentennial [41:261].

By the 1970s, Darling Harbour was an abandoned place, consisting of a series of empty warehouses, unutilized railroad tracks and unused piers. In 1984, the state government decided to rebuild the area, demolish or rehabilitate obsolete port facilities and return it to people after 150 years of industrial use. Only four years later, during the celebrations of the Australian Bicentennial in 1984, a new Darling Harbour premiered buildings and public spaces: a Convention Center designed by John Andrews; a new Maritime Museum, the Exhibition Center and the Aquarium, designed by Cox Richardson; Tumbalong Park by MSJ; and a magnificent, joyous, spiral fountain by Robert Woodward. The Pyrmont bridge had become a pedestrian walkway, although it remained as a revolving bridge to allow the entry of boats to the back of the cove [58:49].

The ambitious plan for Darling Harbour as a 'place for the people' and its rapid completion in four years represented a true 'tour de force' of governmental action. But, as is often the case in this type of actions, similar to those required by an International Exhibition, understood as a single project and conceived by a single head and therefore alien to the organic process of construction of the city and the contrast of its neighbors, the resulting public space was poor and contested. According to Peter John Cantrill, *the result was a kind of theme park of public space, without real city surroundings, lacking connection and integration to the city* [58:49]. In fact, as of 2012, the NSW government has begun to remodel the whole area with a design of new buildings and public spaces closer to the urban and with the incorporation of housing and new commercial developments.

In any case, as Susan King points out, developments like Darling Harbour are alien to the city, not real places, with no respect for the genius loci of Sydney [41:261].

The docks around East Darling Harbour were known as *The Hungry Mile* during the Depression of the 1920s and 1930s. In the 1970s the town was expanded by some coastal landfills between Hickson Road and Millers Point, at the foot of The Rocks, on the West bank corresponding to Darling Harbour. To give continuity to Hickson Road it was necessary to cut and demolish old wooden docks.

## Protests in Barangaroo

The occupancy plan was the subject of a competition in 2005, with the requirement that half of the new area should be allocated to parks. After the closure of the docks in 2008, a new development of several million dollars of homes, offices and a hotel was proposed in this area that was renamed Barangaroo: she and her husband Bennelong were influential Aboriginal figures in the early years of the colony. Owing to protests from maritime unions and others interested in Sydney's industrial history, at 600 m on Hickson Road in Barangaroo, the future headquarters of luxury apartments was officially renamed *The Hungry Mile.*

There were active and serious protests from a variety of groups and citizens concerned about the scope and nature of this development, which included a proposal to build a hotel overlooking the port itself, and now to build a casino designed to attract



King Street Wharf in Darling Harbour

exclusively the richest players in Asia. The proposed building is a tower 250 m high, 20 floors higher than indicated in the regulations approved for its development. An aggrieved Sydney citizen wrote that *the city has been run by the property development industry and political spivs with brown paper bags since the Rum Rebellion* [41:281].

The project was shifting through a series of steps toward a scheme designed by Rogers Stirk Harbor and PTW for Lend Lease, which won a commercial bid for the south end of the site. This scheme widened and disconnected from the layout of the streets, in a way not unlike what happened south of Bent Street in the early days of the city, and the width of the streets was reduced to less than required by the 19th century regulations.

Meanwhile, the Barangaroo Delivery Authority re-planned the park with naturalistic shapes and figures, proposing to excavate new coves in an attempt to carry out a naturalized reconstruction of the grounds. And it did, but according to guidelines never used in Sydney, since most of the previous parks had been conceived as new creations of cleanup and renovation of the natural vegetation.

In 1996 the then *Office of Marine Administration* commissioned a master plan for the site between Burangaroo and the new Darling Harbour, which was approved by the *Central Sydney Planning Committee,* in 1997. The resource used to maximize the connection of the city to the sea was the usual creation of a new border road —in this case a pedestrian walk around the bank— and the extension of the existing streets to connect with it. But its application had difficulties when incorporating the entrance ramps to the private car parks, demanding diverse changes of the level of the street that have diminished its connectivity.

### King Street Wharf - Darling Harbour

In September 2016 the area is still under construction, with very tall buildings inserted between the water's edge and the M4 Western Distributor Freeway, which begins to gain altitude from the back of the cove to access the upper area of The Rocks, where it connects with the Sydney Harbor Bridge. The motorway and its branches generate a barrier of accessibility both by traffic levels and by the huge volume of buildings approved there. The high density of the buildings leaves only small slits between the blocks, which requires detailed design solutions to fit a few gateways between the entrances and halls of the skyscrapers.

### Difficult Entrance to a Trivial Design

The result is complex and rather unreadable if you do not know well the entrances to the area, although it is functionally quite resolved and comfortable when it is accepted that, to reach the shore from the streets of the city, it is imperative to pass through a labyrinth of cafes, among a flowing stream of people who walk with determination toward invisible targets.

On the sea side, the design is trivial, with a long straight line, marked with bars and restaurants on one side and access docks to the ships on the other. The profusion of masts and flags generates a fairground air that dissipates throughout the area of Darling Harbour, now turned into an immense feeding machine for office workers in the morning and tourists in the afternoon.

### Maritime Character on the Other Shore

Its intended maritime character must be sought on the other side of the dock, where a warship, an old submarine and a reconstruction of the Endeavor, the ship of Captain Cook, wrap up the white building of the National Maritime Museum.




King Street Wharf
in Darling Harbour

However, views of this undoubted attraction must break through the great volumes of horrible tourist ships —from squeaky futuristic designs to crude replicas of the wheeled ships of the Mississippi River— that hide the harbor. Nevertheless, the area is the only opportunity for outdoor leisure, without traffic noise, in the central area of the Central Business District — CBD, although it has not reached the level of Circular Quay in its northern zone.

Near the end of the Darling Harbour dock, the Pyrmont Bridge defines another small dock with virtually no sea traffic, called Cookle Bay, where the more touristic and decontextualized artifacts and forms of the harbor are concentrated, completely surrounded by communication routes. The nobly restored Pyrmont Bridge borders the water to the north, while the south is blocked by a raised freeway, where all CBD traffic flows to the Sydney Harbour Bridge to the east and the Anzac Bridge to the west. The east shore extends King Street Wharf to the south with the same alignment of restaurants, buildings, and ships, while the west shore houses a shopping mall and convention center, whimsical designs, plus a small ferris wheel, embedded between the Metro - Light Rail and the water's edge.

Further out is the National Maritime Museum, one of the great museums directly operated by the federal government, due to the history of Australia, its maritime roots and its continued dependence on the sea. Resolved with a large white roof that 'falls' into successive bowed sheets towards the shore, designed by Phillip Cox,

Richardson Taylor & Partners, it was built in 1989 to house some the oldest pieces of the country's history, accompanied by the usual frivolities of the great museums.

In the layout, the white sheets follow the north-south alignment but the trapezoidal plan of the building includes two wings that generate a 'port' scope with diagonal pontoons for mooring of the historical ships. This configuration manages to create a maritime environment moderately protected from the contamination of the rest of the docks, so that the ships moored there become the basic pieces of the museum.

There is a 22 m high lighthouse marking the exit to the port at the north end of the building, at the same time head of the most historic dock, which was brought to the museum in 1987 from a low water point called Cape Bowling Green. Built in 1874 with a wooden structure and sheet metal liner imported from a workshop in Brisbane, England, it is part of a series of 22 lighthouses to mark the North Queesland area, equipped with kerosene third-order dioptic lanterns.

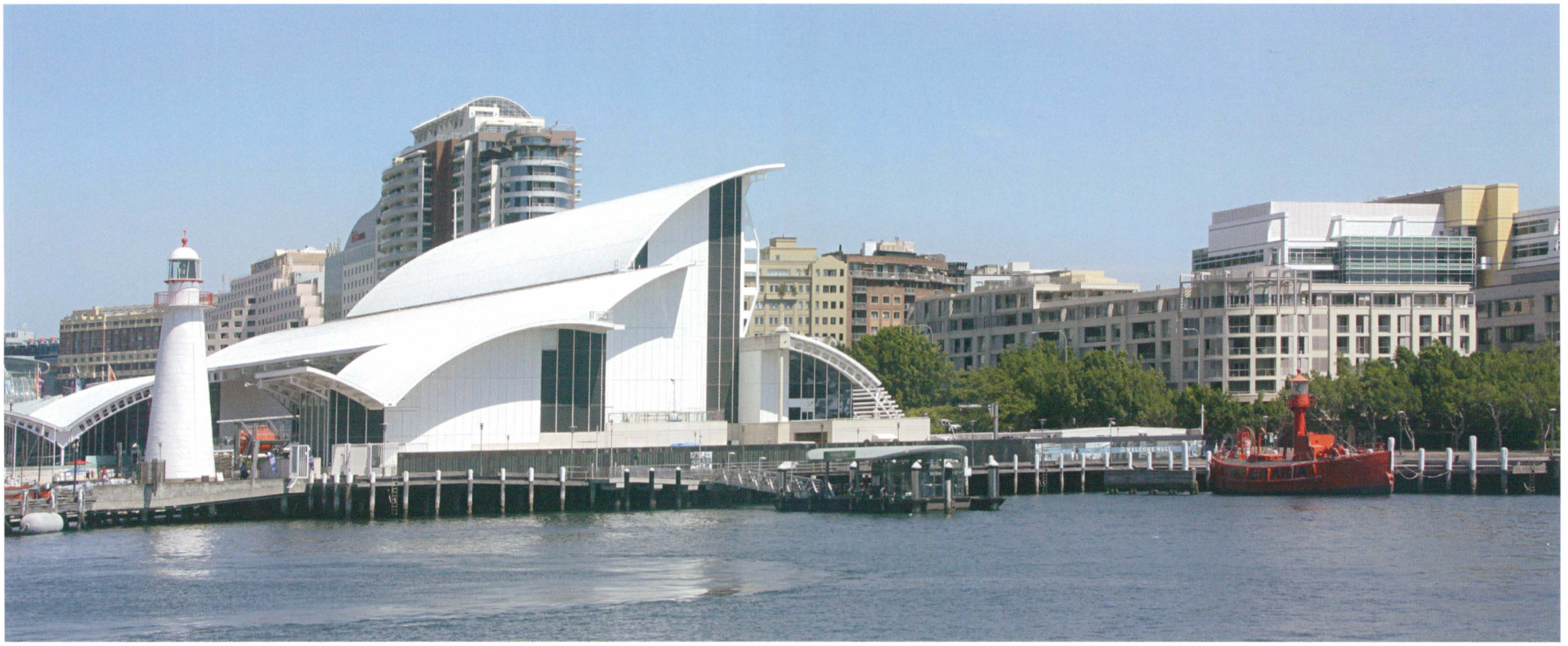
## Parramatta towers

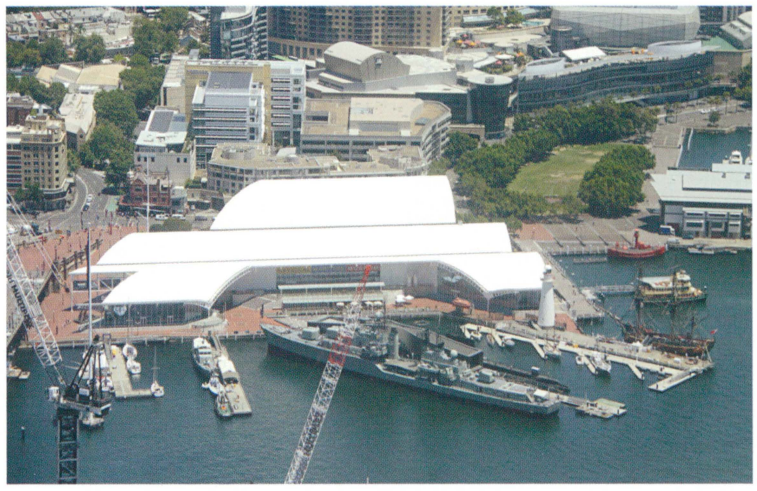
In Parramatta, construction in height has taken longer to develop but, as of 2010, the number and height of the high buildings started has increased strongly. In the last years 2015 and 2016, the city is a forest of cranes, and requests for ever higher buildings multiply, resulting in a kind of new CBD. And recently a couple of large high-rise projects have been questioned, in principle denying them the construction permit.

The last project threatened by the re-imposition of shadow rules is the proposed Holdmark tower, with more than 266 m height. Its construction plans may be overturned by the decision of the Greater Sydney Commission in June 2016 to reject the proposed 60-storey tower at Macquarie St on the grounds that it left in shadow certain areas of Parramatta Place between noon and two in the afternoon during the winter. This decision may involve a cut of 20 floors to comply with the decision.

### The Ten Highest Towers of Parramatta

| | Name | Ht m | Fl | Year | Use |
|---|---|---|---|---|---|
| 1 | Altitude West Tower, Church St | 177 | 55 | 2016 | Mixed use |
| 2 | Riverside Tower | 152 | 41 | 2018 | Mixed use |
| 3 | Altitude East Tower | 127 | 39 | 2016 | Residential |
| 4 | V by Crown | 114 | 29 | 2016 | Residential |
| 5 | B1 Tower | 90 | 28 | 2013 | Residential |
| 6 | Eclipse | 89 | 21 | 2012 | Offices |
| 7 | Escen, Church | 87 | 25 | 2006 | Residential |
| 8 | Commonwealth Centre | 83 | 21 | 1983 | Offices |
| 9 | Colonial Tower | 81 | 21 | 1992 | Offices |
| 10 | Sydney Water HQ | 76 | 17 | 2009 | Offices |







National Maritime Museum
in Darling Harbour








Carpentaria Lightship

## Living Far and Getting Home

American Influence

In an important 2004 article, Robert Freestone stated that Australia has assimilated American ideas for more than a century, reflecting close economic, political and cultural connections. This influence has affected the broader aspects of the built environment, especially in architectural design and dependence on the automobile in everyday life.

From the arrival of the American fleet to the port of Sydney in 1908, the importance of the United States' political-military alliance with Australia has been profound: from the coverage of World War II, when a major military alliance was forged; through Korea, Vietnam, the establishment of top secret US military installations on Australian soil and the Gulf War; to the post-September 11 anti-terrorist war, first in Afghanistan and then in Iraq [25:188].

Australian Way of Life

Although one can not speak of a mimetic assumption of American prototypes and customs, since there were always adaptations, transformations and rejections, it is true that the influence of the American way of life ruled the European and ended up being decisive in the daily life of Australians.

Particularly significant in this regard are the changes in Australia's international affinities after World War II, anticipated in 1942 by statements by Commonwealth Prime Minister John Curtin at the outset of the Pacific War: *I make it quite clear that Australia looks to America free of any pangs as to our traditional links or kinship with the United Kingdom.* Britain was no longer the source of political or social knowledge received. And although Britons still comprised the greater part of the country's migrant intake, they were now joined by Dutch, German, Yugoslav, Greek and Southern Italians [26:69].

During the decades after World War II, *life in the suburbs took strong root as the 'Australian lifestyle.'* The right plot, the self-built house more or less illegally, some precarious urban accesses and services and, above all, the car —always an Australian Holden designed by General Motors, owner of Opel since 1929— constituted its basic elements. And they motivated an enormous consumption of territory and a great necessity of roads, whose forced extension, unfolding or burial has decisively marked the landscape of the outskirts of Sydney [26:69].

Visibility of the Water

But the pressure was especially intense on the sea front, where having a house was the dream of each and every inhabitant of the city. As a consequence of that demand of the last decades, the suburbs of the port and the side of the river have undergone property value increases much faster than other parts of the city. In fact, the distance to the water and to the city center is the most important determinant of the value of properties.

It is easy to see that the better-off communities with beautiful views and high-quality schools are located at or near the water's edge and downtown. These communities also have higher levels of concern for the environment. There seems to be a strong relationship between points with view of water, wealth, and concern for the sustainability of metropolitan Sydney [48:2].

With the 2000 Olympics, organizers thought there would be strong growth in tourism, but Australia's international tourism market increased only slightly and then returned to previous figures. Although Sydney kept twice as many visitors as Melbourne, the next most popular place. More than ever, Sydney and its bay represented the nation itself.

The Olympic Games had less impact than tourism on Sydney's residential real estate market, with one notable exception. Prestigious houses next to the port and situated to the east of the bridge increased by an average price slightly more than 15% in the year 2000 and the houses went to more than $ 6 million total price. In any case, the trend in the real estate sector facing the sea was increasing for years and the increases were much greater in homes near the bay than in other residential markets.

**Most Expensive Houses on the Waterfront**

Westlink, built by ACS











Houses on the edge of the bay

As Hoskins reminisces, *...The obsession with harbour homes had begun well before the Olympics. David Williamson's hugely successful satire of acquisitiveness and social climbing in Sydney, Emerald City, premiered at the Opera House in 1987. The play worked because the fundamental premise, that proximity to the harbour symbolised success, was so widely understood and acknowledged. It opened with the observation that: 'No one in Sydney ever wastes time debating the meaning of life, it's getting yourself a water frontage. People devote a lifetime to the quest...' The commentary was partly autobiographical, as Williamson's wife Kristin later acknowledged. They had moved from Melbourne to a harbourside home in the 'Emerald City' themselves in 1979: 'we began to understand how so many people we knew dreamt of a house on the waterfront. Sydney Harbour was alluring. In Sydney our lives changed'* [35:307].

## Suburbs and Access to the Downtown

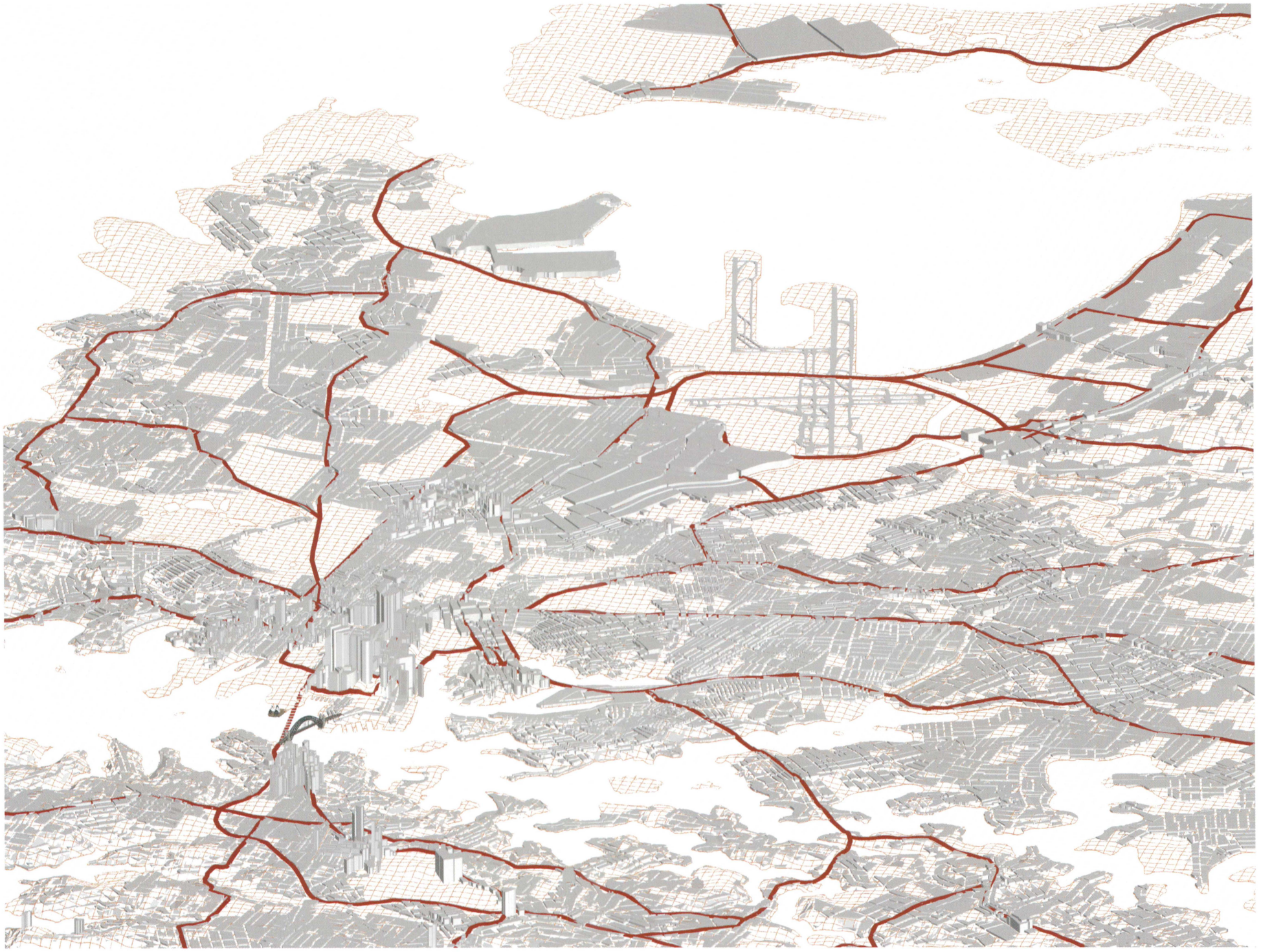
Even with certain precautions not to destroy value on the sea front, Sydney adopted metropolitan highway networks in the 1960s, as a major solution to urban transportation problems exported from the United States to the industrialized countries of the world. In 1974, the *Sydney Area Transportation Study* recommended hundreds of miles of freeway, with an expected cost of $ 6 billion. It was a technologically tough time, when technical rationality became allied with development, while the broader socioeconomic problems difficult to quantify were still not taken into account in decision-making.

The freeway was an archetypal symbol, admired by professionals as much as by the general public. And its programming resorted to traffic growth projections to plan and project new highways that would accommodate the growing demand. It took the specialists a long time to admit that it was a self-feeding process, and in some cases they have not yet fully assumed its consequences.

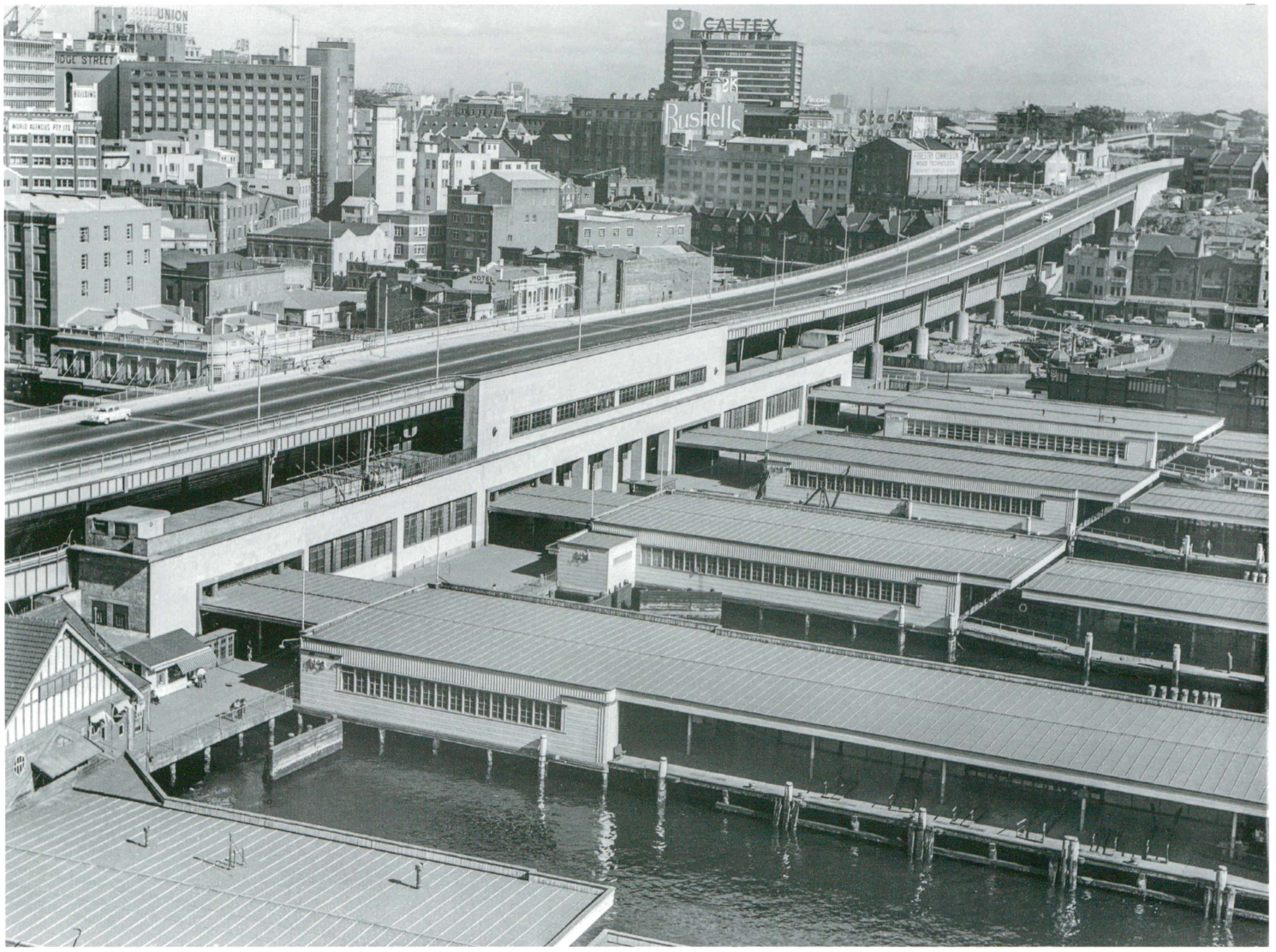
## Nuances and Rectifications

Broadly speaking, American ideas were assimilated into Australian planning theory, ideology and practice, over an extended period. In a finer analysis, however, the thesis is more problematic and must be corrected with many nuances. Despite its similarity to the American search for better ways than suburban development in the form of dorm-cities and car-based shopping centers, the new Australian urbanism developed into a scenario of strong local planning systems, with its own and distinctive historical tradition of internal design of the nuclei, a resurgence of interior residential development and a distinct socio-spatial differentiation [25:208].

As Robert Freestone sums it up, criticism is once again important. The grandest aspirations of the new urbanism are seen as the expression of a naïve environmental determinism that can only superficially look at the most fundamental problems of the *"economic inequity, racial tensions, placeless sprawl, and environmental degradation."* The greatest impact has been aesthetic and local rather than structural and regional, on a scale that leaves unresolved issues of employment and land use, integrated with transport [25:208].



Network of access roads to Botany Bay




Cahill Expressway at Circular Quay, 1958. Courtesy of City of Sydney Archives. NSCA CRS 48/783

## Roads and Bridges

The planning style exemplified by the urban freeways was headed by the OPEC oil crisis of 1973, which challenged many of the old assumptions of growth and public funding, forcing a fragmentation of philosophies and approaches. American influences decisively introduced this mix into a number of areas, including environmental management, landscape planning, public participation, transfer of construction rights, and sensitive planning with space on a human scale. Economic development strategies were based on US models such as suburban business parks for the emerging information economy and the new development of the sea front [25:204].

## Cahill Expressway, 1959

The first Australian highway harvested a long collection of grievances and protests from its concretion as great urban artery in 1945. Its first section corresponds to the connection of the Sydney Harbour Bridge with the distributor towards the east zone and the south of the city, as metallic viaduct above Circular Quay. The need for a viaduct at that location for the Metro and Railway comes from the work of the Sydney Improvement Commission of 1908 (see Chapter 4) and was long debated and thought over.




Coca-Cola Sign in Kings Cross, at the beginning of Darlinghurst Road




M1 towards Kings Cross

## Vandalism in the Domain

But its continuation through the Domain, built from 1959 in trenches and a few meters from the first Residence of the Governor, the Conservatory, the Botanical Garden and the Art Gallery of NSW, in the noblest and most important patrimonial area of Sydney, produced numerous protests. There it also connects with the entrance of the submarine tunnel that crosses the bay to the North, giving rise to one of the most trafficked and disliked knots of the city, despite its important metropolitan role.

Susan M. King understands that the eight lanes of the Cahill Expressway, *'Sydney's first urban freeway, intended as a symbol of post-war progress,'* through the oldest garden in Australia, was an act of vandalism, even desecration which, with its trench, partially destroyed the close spatial relationship between the Botanic Garden and the Domain. It also cut the Mitchell wing of the State Library that it left abandoned in the middle of traffic [41:246].

After crossing that delicate area of the city, the M1 passes next to Woolloomooloo and takes different names in different sections of tunnel or surface to take a turn






M1 Expressway

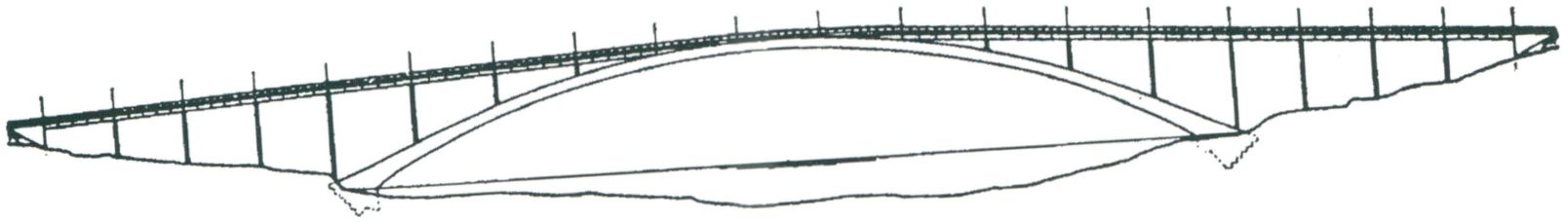
Downtown bound M1 across the Domain

and head straight for Kings Cross, in a straight section presided over by the sight of a giant Coca Cola poster attached to a tower, which functions as a peculiar landmark of the neighborhood. Then it heads south and past the green parklands of Moore Park and the Australian Golf Club, then through the primitive Swamps supply area, to reach the airport and border Botany Bay to the container port.

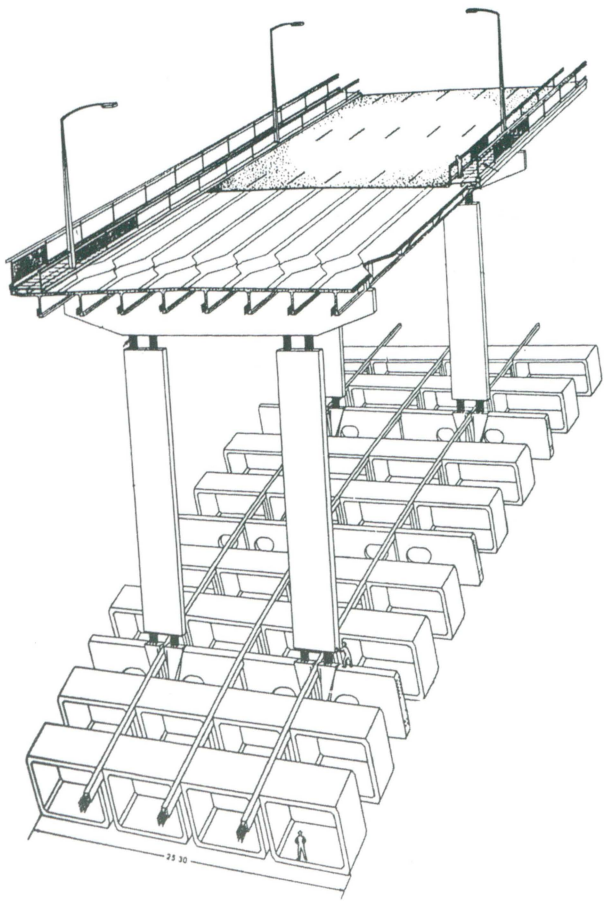
According to Susan King, *the 1960s were a period of unprecedented demolition and re-building in the city when modernity, delayed by restrictive building codes, arrived with a vengeance* [41:246].

Prior to the construction of the Gladesville bridge, the crossing of the Parramatta River was done through an 80-year-old lattice girder bridge, but its two-lane board including tram tracks was totally inadequate. To replace it, a design for a new metal bridge had been prepared, but the builder presented the alternative design of a large concrete arch made by consulting engineers G Maunsell & Partners, London.

**Gladesville Bridge, 1964**







Gladesville Bridge, 1964



Gladesville Bridge, 1964

It was a large arc 300 m (1000 ft) span, the largest in the world at the time, formed by four parallel cellular section arches, cemented in two concrete stirrups directly supported by the rock. Pillars resting on the arches support the board, also made with a concrete crate beam.

What was really new about its design was the process chosen for its construction: each of the arches and the other elements of the bridge were prefabricated by voussoirs or sections in workshop, mounted on the work on metal frames, grooved between them and later pushed, according to the directive of the arch, by jacks installed in the chambers of the span, to separate them from the centring.

When an arc was completed, the centring was moved laterally, to place the voussoirs of the next one. Once constructed, the four arches were post-tensioned laterally to achieve the total monolithic structure. Then the abutments were made and the beams and joists of the board were positioned, all made with prefabricated elements, and then the slab was concreted in situ.

This construction process decisively influenced the construction of bridges of all kinds in all parts of the world, demonstrating the feasibility of dividing them into pieces, prefabricating the pieces in a workshop and then 'sewing' them later with prestressing or other means in the work. This ensured the quality of the concrete and the precision of the dimensions, reducing the risks associated with the construction in situ of large structures. And the Gladesville Bridge entered all the textbooks of civil engineering schools around the world.

**Anzac Bridge, 1995**

The Anzac Bridge is the newest of the great bridges in Sydney Harbour. It saves Johnstons Bay and links the city with the suburbs to the west via City West Link and Victoria Road as the main route to the M4 and Olympic Park. With a main span of 345 m, a total length of more than 800 m and two piles 120m in height, it is the longest cable-stayed bridge in Australia and one of the largest in the world made of concrete.

It is a correct bridge, well done, with very careful finishes and details, designed with great attention to its insertion in the flows of the big city, as a key piece of




Anzac Bridge from Sydney Tower

the city's connection with the suburban west, which is the fastest growing area. It also carefully attends to walking or cycling between both margins, which is made possible by twisting ramps giving access to a reserved lane located on its north side. But its impeccable technical make-up and necessary functionality are not enough, however, for the city to assume it as its own.

This may be due to its forced location on the branching bay configuration, as it stands at one end of Johnstons Bay, just as it opens onto the wide Rozelle Bay. Before and after the bridge, the motorway skirts this last inlet, so that the passage does not seem to be linked to the margins where it is supported






Open section of the old Glebe Swing Bridge

Anzac Bridge, 1995

obliquely, but to a flow alien to them. The old bridge of the island of Glebe, replaced by the Anzac Bridge, crossed straight over the strait and obtained a greater rooting in the zone.

The old bridge formed part of the access from Darling Harbour and the Pyrmont warehouse docks to Rozelle Yard, White Bay and Glebe Island. First it was a fixed bridge, but its main vain was turned into electricity rotating in 1903, at the same time, and by the same engineer Percy Allan, as the Pyrmont bridge. In 1995 it was out of service and permanently open, but recently it is trying to recover as a cycling track and to use the extension of the Sydney Light Rail to White Island.

The Location, the Architect and the Project

The Podium and the Cover

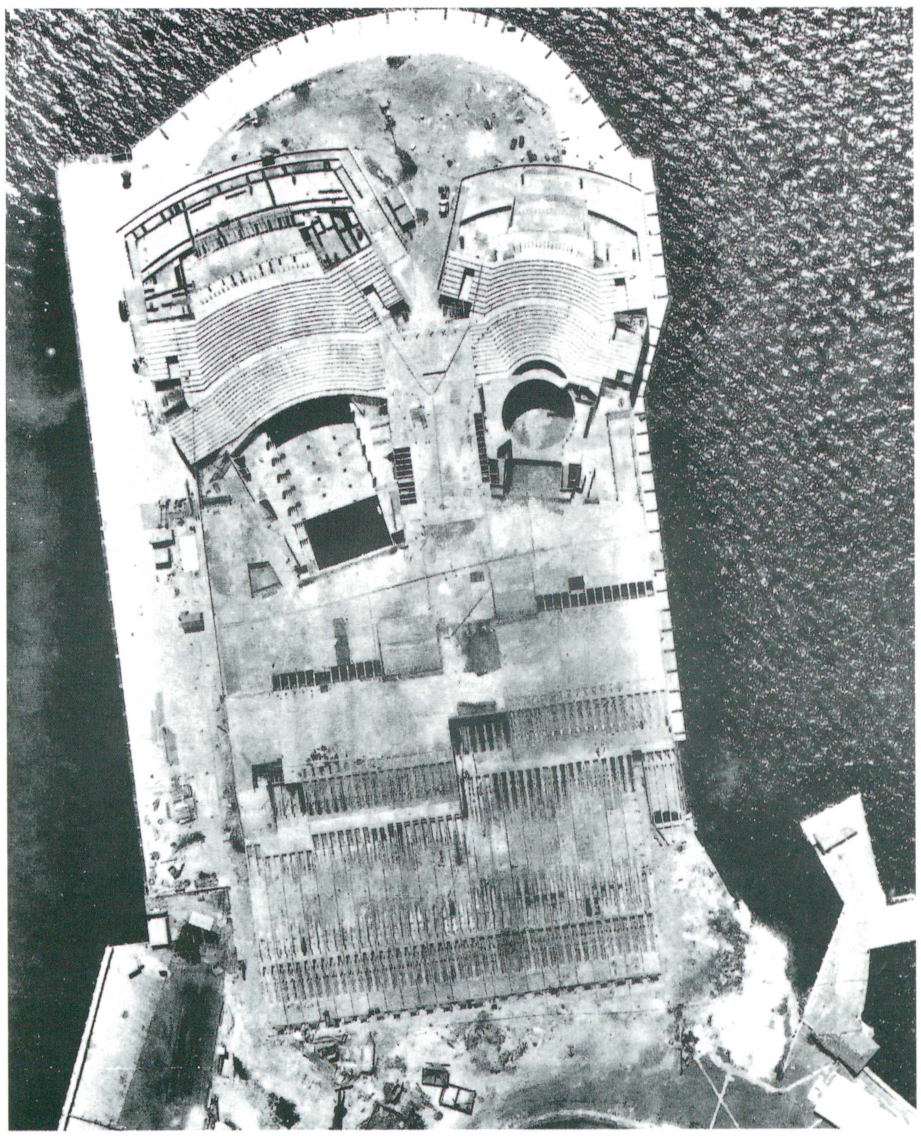
## Opera House, 1973

But the work of greatest incidence on Sydney Harbor was not a new bridge but the Opera House. Few times in the history of construction a building has changed both the place where it sits and the city that houses it. It was located to the northeast of Circular Quay, on the peninsula of Benelong, then occupied by a trivial bus station but with all the qualities of a privileged site. The government was right in its choice and also in calling an impeccable international project competition.[60]

The jury chose the fine proposal of Jorn Utzon, a Danish architect, young and little known, whose construction required much more effort, time and money than expected and cost him his dismissal. When the work was finished some time later, the result astonished the world with a radically new and dazzling building that radiated its presence on the port and the city to fuse them into a unique spectacle. That happy ending turned the difficulties of its gestation into legend and elevated the Opera House to the category of Myth.

The program was not simple, since it included opera, concert, and dance halls, plus two theaters and ancillary units. Utzon concentrated everything on a podium at the end of the peninsula, leaving a wide esplanade in front. From that large square, a huge staircase opens to access the podium, which also functions as an amphitheater rearwards, while the vehicles have to surround it from the end of the pier to enter by its side. The podium houses the paved access for goods and the public, and provides a raised platform for the main auditoriums, arranged according to two axes slightly divergent from the square.

Plinth of the Opera House [46:50]



The exterior staircase has a replica underneath it with direct access from the cars to the interior of the lobby, located at the podium level. From there, it is necessary to circle the Opera stage to continue ascending to the different levels of amphitheatres by the side stairs. Under the stalls and tribunes are located the small rooms and the rehearsal spaces, with all their dependencies.

And from the podium, sheltering all this, unfold three curved vaults, staggered and open towards the sea, connected with a fourth placed in the opposite direction towards the square. Four other somewhat smaller vaults are deployed in the same way on the other axis above the concert hall; and the whole is completed by an isolated pair of small vaults, located at the foot of the staircase by the side of the vehicle access.

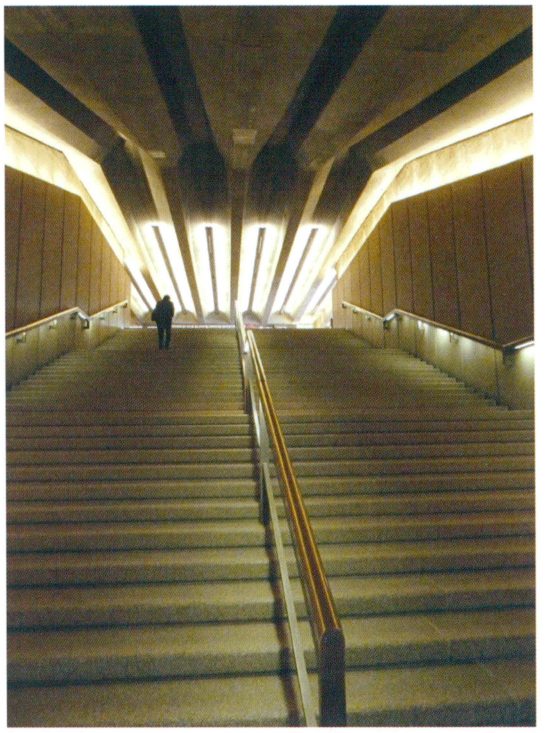
This complex arrangement is expressed simply and directly in the elevations, as a set of candles on the deck of a ship. The classical composite podium solution with a building above becomes a metaphor for the main use of the port and, from there, takes over the discourse on the city. But the place and the circumstances of the work provide a relevant contribution that is indispensable to understand that process.

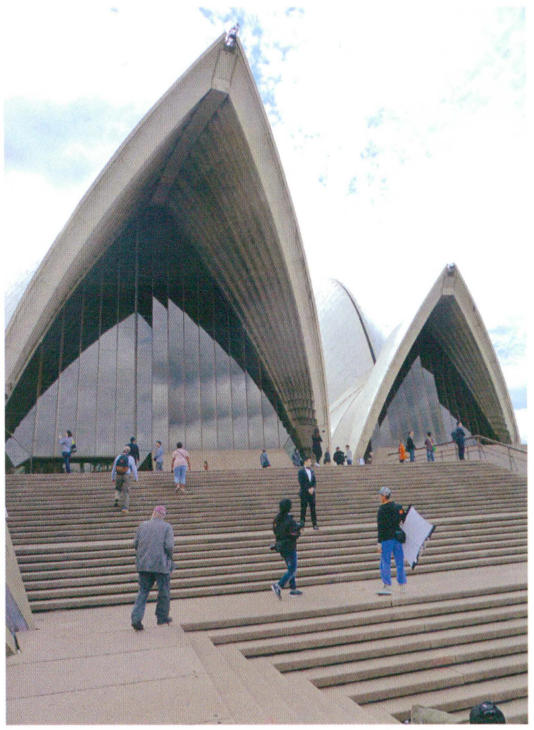
In an article titled *La huella de un lugar (The Footprint of a place)* [46:51-56], architect Enrique Sobejano expresses his interest in the aerial photographs of the podium of the work, still unfinished, and without the presence of the shells. He is attracted by *its strange quality to represent a suggestive building that emerges from the land with limits still imprecise, imposing its enigmatic presence on the bay of Sydney.* And he suggests that those photographs contain *perhaps the key that illuminates a work as intense as that of Utzon.*



Opera House









*The traces of the two auditoriums on the Bennelong peninsula ... reveal to us the transformation of a place by means of a topographical intervention, where it is difficult to discern the limits between the natural and the artificial ... Its clear lines do not oppose the building to its surroundings but firmly root it to the ground in a fake reconstruction of the landscape ... On the podium, like an enormous block of granite, the auditoriums and the great stairway of access seem to be carved, establishing the plane of reference that gives formal concretion to his idea of building a place* [46:51].



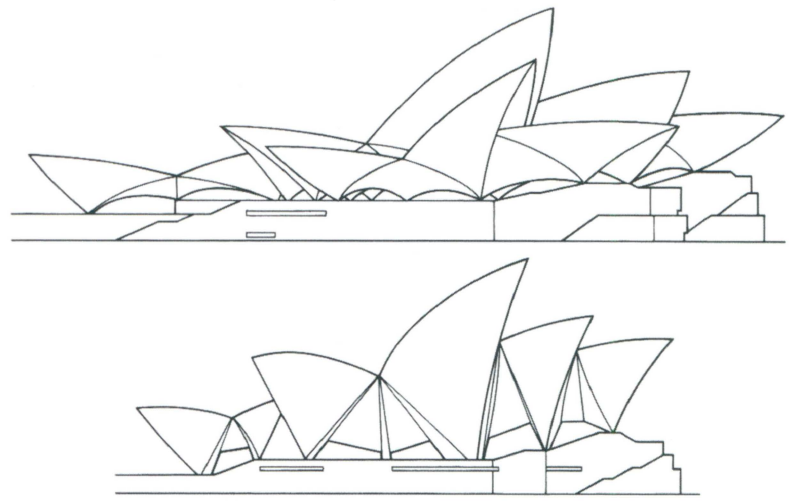
In the struggle to achieve an illusion of lightness without renouncing the need to anchor to the ground, or a primordial respect for the place, the expressive use of the podium symbolizes the connection with the land, makes it into its *foundation* and consequently into a topographic as much as an architectonic form, but the materialization of that lightness placed above in a concrete structure was not simple.

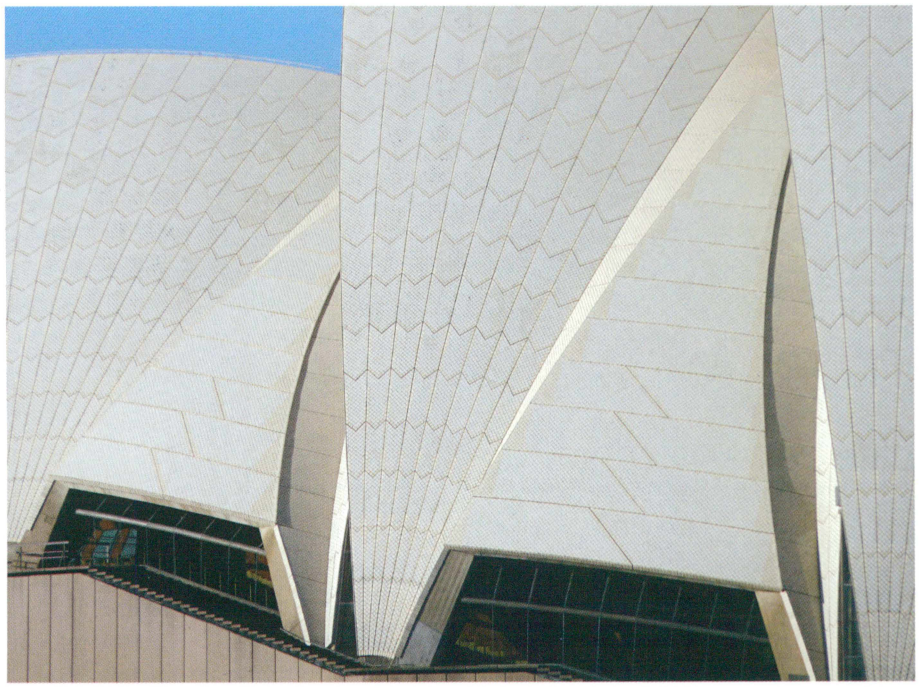
The tenacity of engineer Ove Arup in finding a constructive solution for the forms designed by Utzon was successful, but resulted in a substantial alteration of the original silhouette of the building. A silhouette was proposed by the Jury as a primary —if not unique— justification to defend Utzon's proposal as the best solution for the objectives of the contest. It was Eero Saarinen who rescued Utzon's proposal and defended it against his colleagues. The American architect had arrived late for the Jury meeting and, seeing nothing to his liking among the pre-selected proposals, he dedicated himself to stirring among the discarded ones.

As the story goes, the simple vision of Utzon's drawing suffices to fall in love with the power of that image and its suitability to incarnate itself as symbol of the city. The elongated peninsula where the work would be located provided nautical references, given the importance of the port for the city of Sydney. But Utzon had surpassed the literalness of the forms of a ship with the poetic device of showing several sails. For all that, the maintenance of that silhouette was something absolutely necessary in the development of the project.

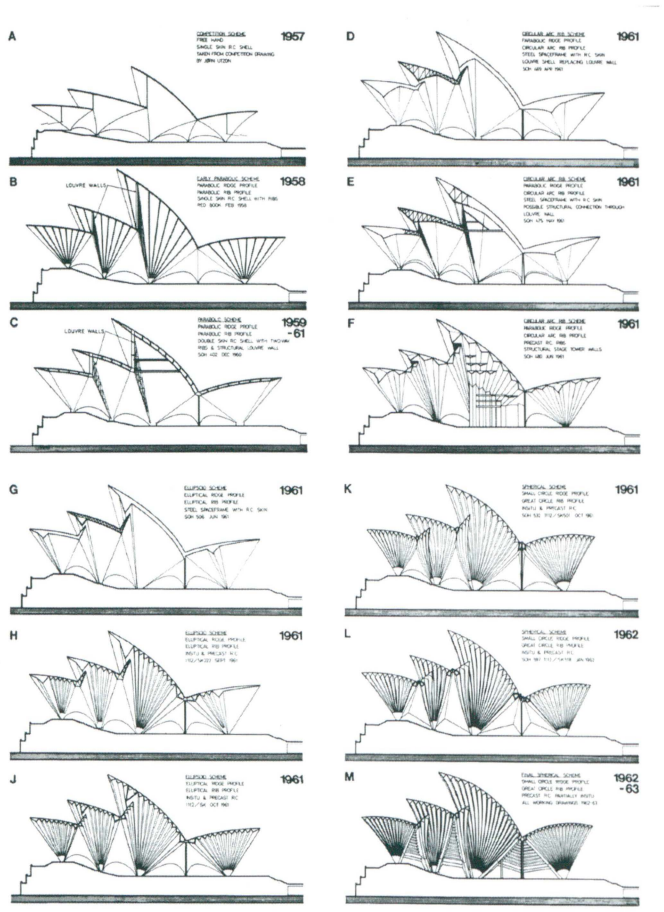
But in the 1960s, the shapes drawn by Utzon were not simple to build. In principle, these were forms close to laminar concrete structures, such as those built by Eduardo Torroja, then generalized with the works of Candela or Isler and many others. Although the difference was substantial: the design of these small sheets was the result of a delicate balance between design, calculation and testing in a reduced model, capable of guaranteeing its viability. In Sydney, the shape was just a beautiful stroke, for a huge building in a wonderful place, but very difficult to build.

## Shapes Difficult to Build










Shapes of the Opera House[61]

## Cladding of the Roof

However, it did not seem necessary to build these shapes in concrete, because their surfaces were not intended to be seen either inside or outside. Inside, they were covered with acoustic screens, of specific shape and materials, and totally disconnected from the structural material of the roof. On the outside, a vitreous cladding was provided from the beginning, and the final result was a proven success.

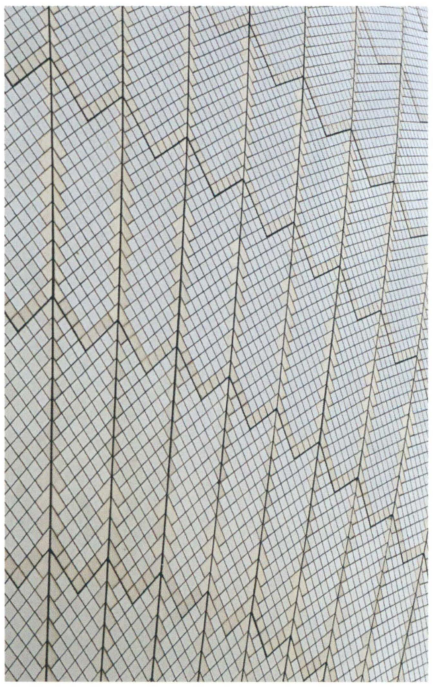
According to Utzon, the building should reflect the sun, it should shine: *a roof of white tiles would emphasise the sculptural character of the building... The sun, the light, and the clouds will make it a living thing.* To that end, a million glazed ceramic tiles were manufactured in Sweden, which were sent to Sydney to be stuck to tile-lids prefabricated on site and fitted into the fan-like rib sections. Once assembled, the zigzag pattern of the tiles added another subtle geometry to the curve of the sails. With the sheen of the glaze it gave the impression of a scaly skin and got the appearance of a living being [35: 272].

## Structure of the Shells

The graphical representation of the shapes and their subsequent construction demanded a precise geometric definition, and for four years Arup engineers studied up to eight solutions for the covers, from the first parabolas, through ellipsoids to circular ones. In 1961, Utzon proposed the finally adopted form of trimming all the shells on the surface of the same sphere, a simpler geometry to represent, calculate and build.

The constructive solution consisted of a series of pointed, prefabricated concrete arches, drawn from the same sphere and placed in a fan side by side to form the roof. Each was made with a series of concrete segments 4.5 m long and about 10 t weight, glued with epoxy resin and sewn with post-tensioned steel cables. The cross-section of these 'ribs' ranged from a solid T at start up to a wide Y-key, to lighten the structure and homogenize the stresses.







The roofs over the stages of the Opera Theater and Concert Hall are larger and require larger ribs, which decrease in height and width as they climb the stands. The weight of these large pieces of concrete obliged reinforcing the supports on the podium with very artisanal methods when it was already built. And all this happened in a building 183 m long and about 120 m at its widest point, with a floor area of about 18,000 square meters [53:179].

The Opera House was conceived between 1956 and 1973, shortly before the technological development of digital methods of graphic representation and structural analysis and was accomplished with basically manual means, that obliged simplifying the forms. To these difficulties was added the architect's scarce ability to respond to the innumerable problems caused by the complexity of the interior of the building, whose cost was ten times greater than the structure. All this conditioned the progress of the project, extended it 17 years and multiplied by 13 its final cost.

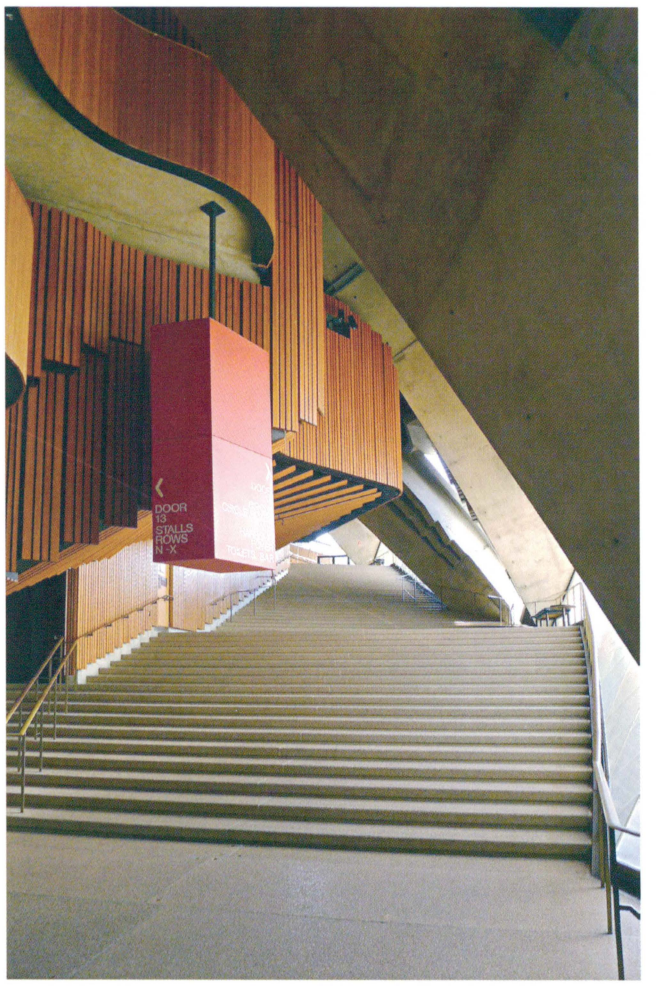
## A Manual Process, Slow and Expensive

In addition, the structural solution finally constructed is far from the one imagined initially by Utzon, due to the important modifications introduced to make its analysis and representation feasible. Utzon imagined a thin sheet of concrete floating on the landscape, but finally a taller, shorter and heavier structure was built, consisting of prestressed concrete ribs of strong sections, whose shape had to be coupled to a spherical geometry [42:53].

## An Anachronistic Consideration

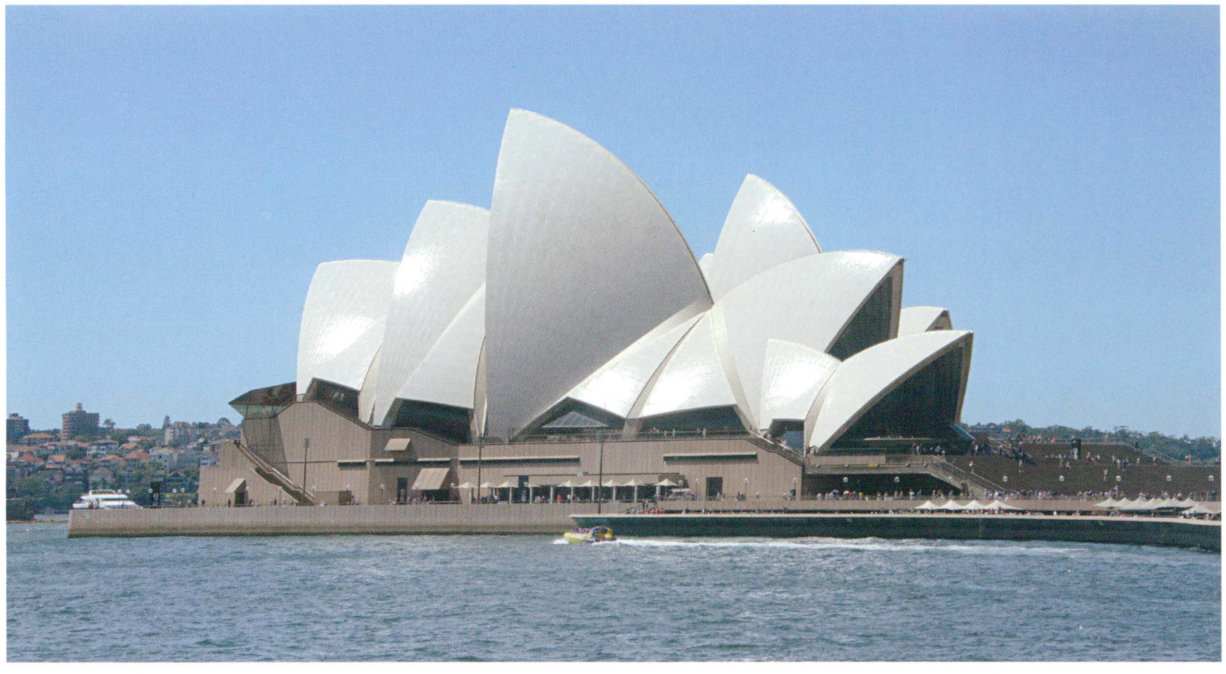
According to the documented thesis of the architect Juan Rey, if this building was to be constructed at the present time, possible structural schemes for the roofs of said building would be considered respecting the 'free' form originally proposed by Utzon as well as its laminar character, emphasizing the impact of computers and programs on the way buildings are conceived.

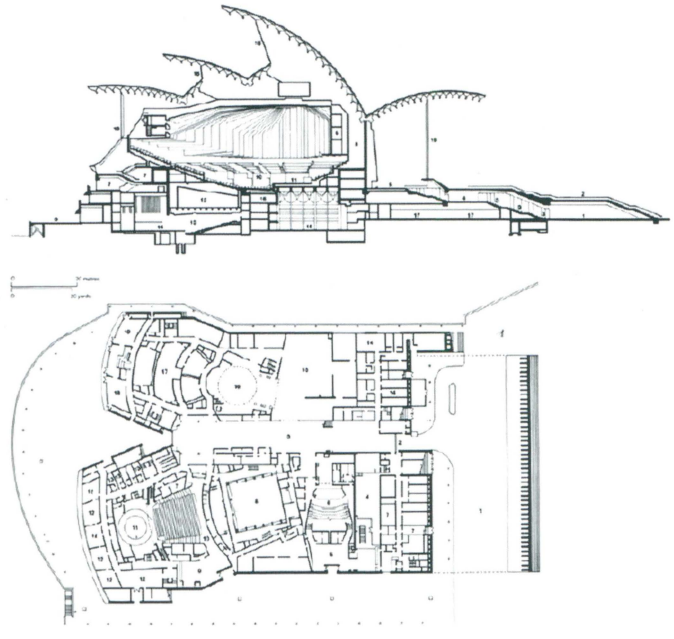



DOOR
TO
STALLS
ROWS
N-X









Opera House (1973), [53:401]

Today, and even then, since the roof was not going to be seen, it seems easier to generate a surface of the size and shape proposed by Utzon with a metallic structure. The fundamental advantages compared to the built version would combine greater lightness, ease of prefabrication, less auxiliary means and speed of execution, hoisting complete modules previously attached on site [42:56].

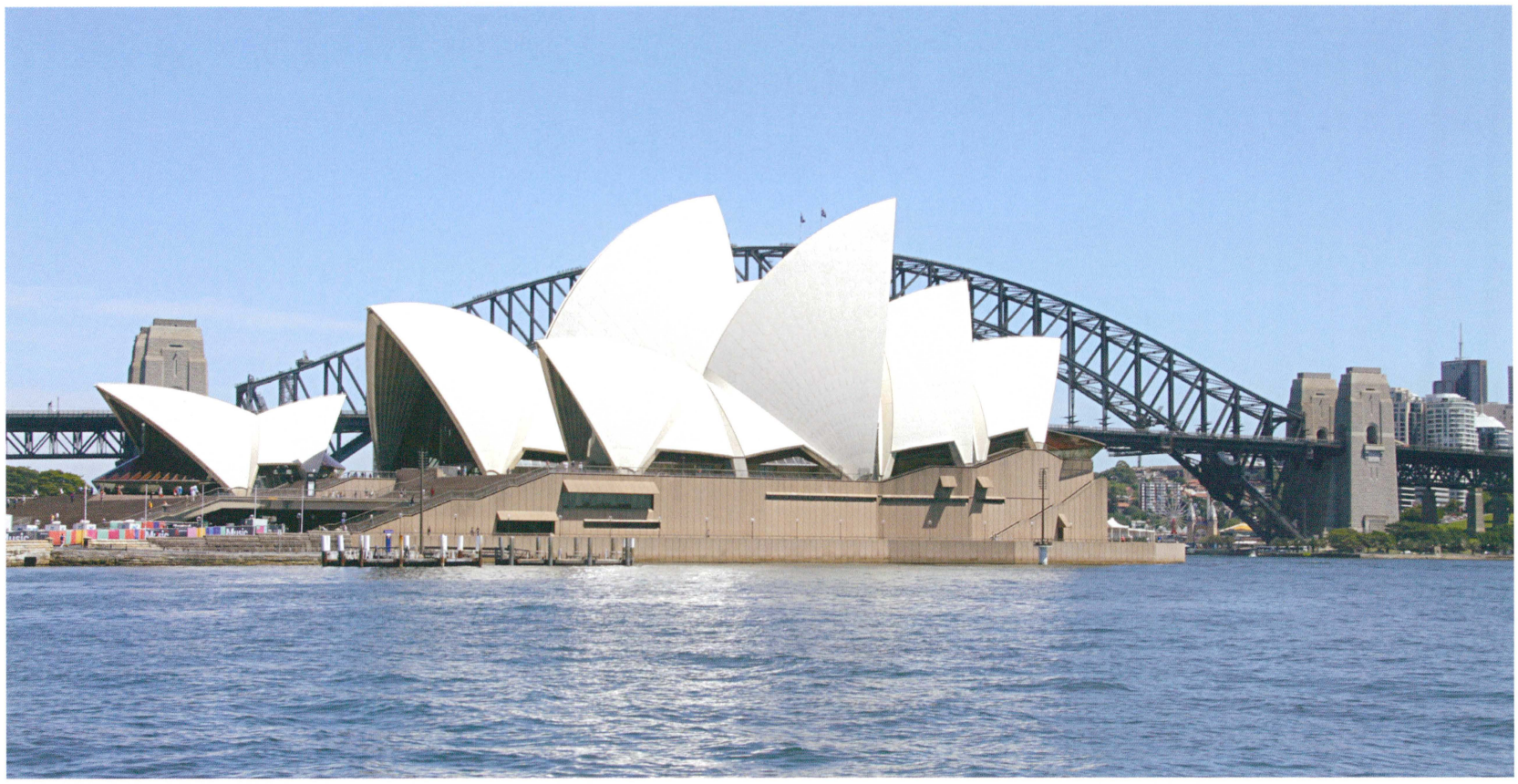
## Difficulties during Construction

Utzon suffered on account of the greatest work of his life and was forced to abandon it, but Ove Arup also had a bad time although he was able to finish it. Derek Walter reminisces in his book on the art of British engineers [65]: *I remember attending a talk by Ove Arup when he was placed in an unacceptable, dilemma, in the dark days just prior to Utzon's resignation. Whilst maintaining an unswerving love for Utzon's concept, which had seduced politicians and public alike, he was plagued by a growing awareness that Utzon was not prepared to face the problems of combining buildability and user requirements in the extraordinary silhouette which had become the Opera House.*

*The politics and confusion surrounding the sad Saga left Arup with many problems: the departure of a wayward genius, an escalating budget and a research and development requirement quite unprecedented for a building at that time. It was not the perfect scenario to complete the program, especially when this was coupled with politics both fiscal and artistic which started to dominate progress. Yet at least it was reassuring to know that Arup was probably the only practice in the world who could continue on the project and bring it to a successful conclusion* [65].

## From the Landscape to the Image with the Bridge

The Opera House was decisive, but the progressive transformation of the landscape of the port of Sydney into an image had begun with the great works of engineering, able to confront its scale. Long before the enormous growth of ship dimensions, works such as Circular Quay, Woolloomooloo Wharf and, above all, the Harbour Bridge transformed the bay and stamped on it the mark of man.



## The Opera and the Bridge Were Never Rivals

As Hoskins indicates, *the bridge gave the harbour a skyline and, in doing so, created a visual icon that instantly symbolised the waterway. The arch then entrenched the waterway as a place of undeniable national significance: Sydney's harbour and its bridge came to represent Australia as much as flocks of sheep. That the completion of this visual shorthand coincided with a new era of graphic promotion, that so relied upon a single potent image, enhanced the iconographic status of the place even more* [35:219].

The new bridge saved the port in a single step and its visual impact was more evident in its first three decades when the structure dwarfed the surrounding buildings. Then came the Opera House and joined the bridge for more of Sydney Harbour's glory. But, with all its splendor, the great building of Utzon did not enter in competition with the bridge, did not try to steal its limelight.

Although its novelty load was much greater than that of the bridge in typological and formal terms, the building never elicited comparisons as to the level or quality of its construction. The bridge belonged to an earlier period, which enhanced the material with the shape, forming the iron in a large arch to use its resistance and facilitate the construction process cantilever from the stirrups. The building, on the other hand, disconnected from the material to establish itself as an autonomous form, independent of the process, completely alien to its constructive possibilities.

The attractiveness of the Opera House was not born of the confrontation of natural laws to overcome an obstacle, but of the suggestion of the playful use of the sea and the wind, so dear to Australians. The nautical reference of the silhouette to



several sails was also linked to the port, but as a poetic of pleasure and enjoyment of the sea favored there. Both constructions are intimately linked to the port and their joint presence acquires the specific role of reinforcing the value of the site, turning it into one of the most famous places in the world.

Thanks to its suggestive silhouette or some other reason to discover, the Opera House does not act on the landscape like an isolated building, nor does it impose its presence on the bridge or minimize other attractions of the city. On the contrary, it contributes decisive links to the construction of the landscape, putting in relation the more marked components of Sydney's bay: Harbour Bridge, Circular Quay and Botanic Gardens. As Stefan Hertmans points out:

## The Opera Unifies the Whole as Landscape

*The famous shell-shaped Opera House contrasts with the tall metal bridge, the park with its white ibises and corellas, and the quay with the metro line above it —all these things that were placed in a different perspective by the intervention of that most recent building, the Opera House. Such open spaces are linked together by the subtle adhesive of the human eye... they interact and complement each other, in turn forming the glue through which the eye goes exploring and assigns a place to the skyline, the water, the arc of the iron bridge or the kissing couples..., by the railing of a ferry boat* [32:21].

With the Opera, the power of the gaze as to bind the relationship is clearly aided by the feeling of general acceptance produced by the bay's sheet of water, by the port itself. When navigating its waters, one crosses a functional *unit* with multiple components, and the presence of the Opera House helps to specify or, perhaps, appropriates the overall image of the city and the port.




Australia's 150th Anniversary Sydney 1938: Pageantry and carnival January 26th-April 25th. Poster Australian National Travel Association. Courtesy of National Library of Australia, nla.obj-135690424



## Its Image Brings Together the Whole Harbor

This image is able to bring together all of this around our graphic memory of the building: its iconic capacity 'mobilizes' the harbor to bring together its shores and its protagonists, the Harbour Bridge and Circular Quay. And that happens because, in our memory, the image of the Opera House does not remain as a simple music room, but as the port itself. It does not matter so much what it is, but where it is or where it belongs, as Heidegger said. It is remembered as the port or, if you prefer to take it to the extreme, as its own.

This link between recollection and perception, already clearly established by Henri Bergson in his book *Matter and Memory,* is activated by moving and acting: *when mere contemplation is overcome, memory is actualized with action, ceases to be the past and becomes perception. The past leaves its traces in matter, but they are only traces to the consciousness that perceives them and interprets them from what it remembers, to constitute them into the seed of action* [4:254].

The symbolic power of the Opera House generated a new interest in the meaning of the city as a whole. The magnificent building meant the culmination of a historical journey of overcoming difficulties. The old colony of the prisoners could be shown to the world with a shining robe, and worthily represented by a young population, open and without complexes, proud of its capacity for transformation.

## Symbol of the City and the Country

According to Derek Walter, everything seems simpler: *A building that took fifteen years to emerge from its chrysalis is worth more than passing reference, especially when its physical beauty still dominates the skyline of one of the most beautiful Harbours in the world and where the poetry of its conceptual form has figured on every poster extolling*

*the virtues of Australia since the Opera House opened in 1973. Sydney Opera House remains, affectionately the built symbol of the 1960s* [65].

However, that the Sydney Opera House is an excellent building is not enough to establish that quality as a sufficient requirement —perhaps not even necessary— for it to become a symbol. Many large buildings have become symbols of their cities. With more or less power, such are the Eiffel Tower in Paris, the Brooklyn Bridge in New York, the Sacred Heart on Cerro Corcovado in Rio de Janeiro, the Brandenburger Tor in Berlin, the Cibeles in Madrid or the Little Mermaid in Copenhagen. But their power as symbols, as well as disparate, is not necessarily derived from their value as constructions, nor does it serve to improve it.

In his book *Edifice Complex: The Architecture of Power,* Devan Sudjic emphasizes the power of architecture to exceed all limits, but without accepting that its value as a symbol enhances the value of the building itself. As an example, compare the Guggenheim of Bilbao with the Opera of Sydney: both are a symbol of their cities, but *with its puckered titanium-skinned roof, swooping and soaring through the bridges and embankments that line Bilbao's river, the Guggenheim was more like a train crash than a building, a homemade mutant version of the Sydney Opera House* [56:248].

As we have seen, the road from building to symbol is more complex and to travel it one must journey through principles or categories of the landscape. In their mutual respect, the Opera and the Bridge give a new meaning to the ever beautiful Port, which should be sought as an irradiation of the city. For as Gilles Deleuze asserted, the meaning is elusive, it is not in things or acts. It is not a sensitive fact or a quality of those acts or things, nor does it exist or is given in what is expressed in our propositions about them. It inhabits, rather in the *frontier between propositions and things,* and it can be glimpsed when one is looking for it or trying to build [17].



Opera House, Vivid Sydney

## From Symbol to Meaning

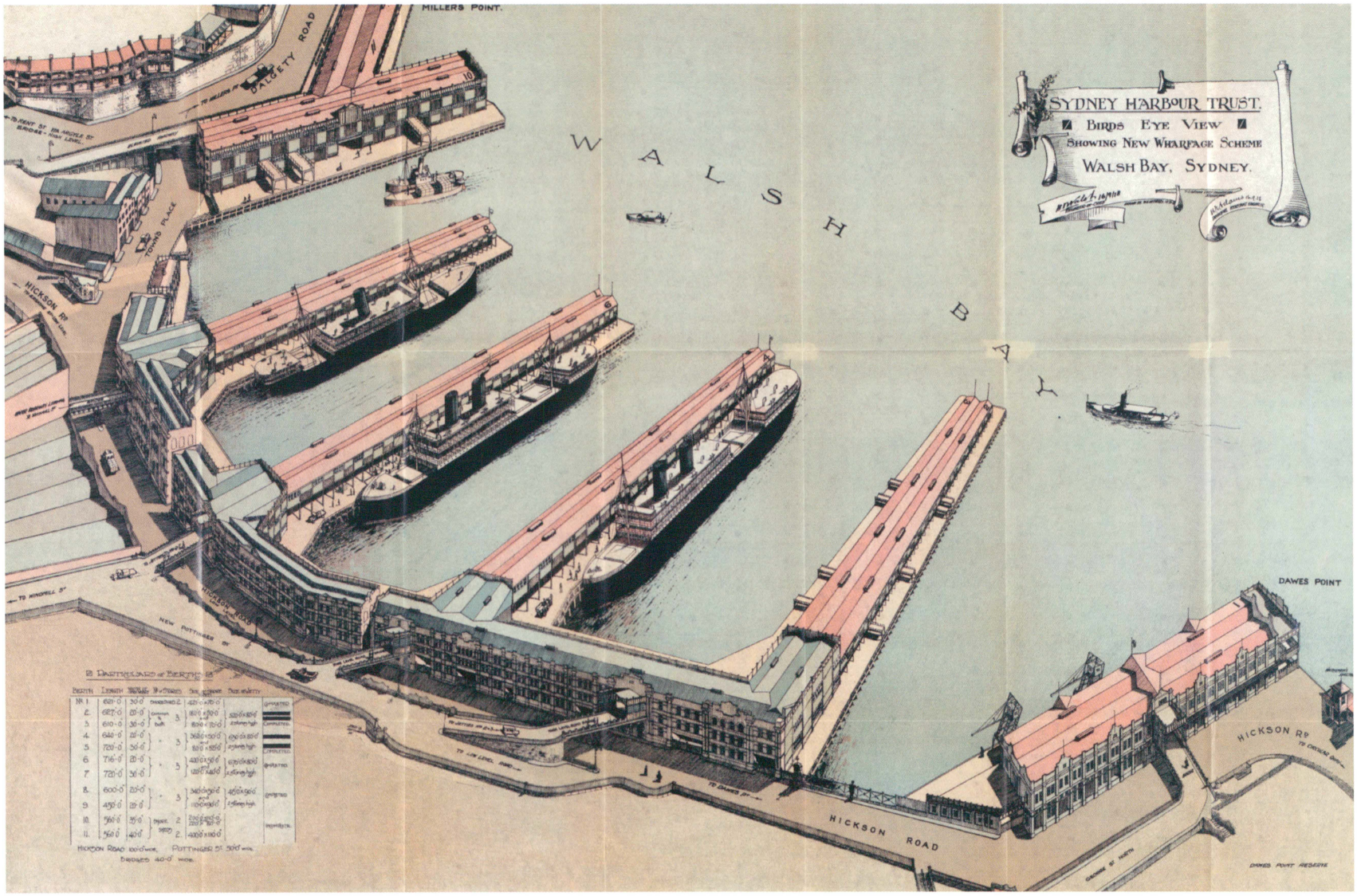
In Australia, this link of meaning has to be sought in the ability to gather from the water surface, specifically the area around the Circular Quay dock, constantly furrowed by ferries that bring their presence to all other piers and places of the port. And when sailing is not possible, the best way to enjoy them together is to surround it, traversing its piers from one end to the other.

Sydney Harbour is the true reference center of the continent.

## The Repressed Memory

And nothing should disturb that new image. In celebration of 150 years since the 'arrival,' the Sydney City Council gave an official interpretation of the city's coat of arms. On one side, a wild man or aboriginal, the original holders of the country; on the other, a sailor in uniform of the eighteenth century, when an armed detachment of seamen landed and took possession of the site in 1788 ... Motto: *'I take but I surrender.'* The English landing detachment took the possessions of the Aborigines, but at the same time subjected them to the growing nationality founded in the settlement of Sydney.

A 'modern' abridged version, adopted in 1996, eliminates human figures, shows an anchor interlaced by a colored snake and reduces the legend to 'City of Sydney.' And the human survival and domination effort and the recognition of occupation by force have been suppressed: the original coat of arms is already part of the repressed memory of the city, to be found only by those who read such relics in the fabric of the city itself [41:103].




## From Commercial Use to Public Space

Bird's eye view showing new wharfage scheme in course of construction, Walsh Bay, Sydney / H.D. Walsh, Engineer-in-Chief, 16/9/18; W. E. Adams, Principal Assistant Engineer, 16.9.18 ; drawn by W.H. Withers, 12.9.18 ; T.C. Groom, Chief Engineering Draughtsman. Courtesy of National Library of Australia, nla.obj-229933307

## The Shore for the People

The vision of the port as a referential center promoted other possible uses of heritage built on the maritime front. As usual in any port, this heritage was becoming obsolete for the shipping of goods, and the silos or barns were already unthinkable, as were the mountains of bulk on the docks or the containers stacked on the adjoining esplanades. The cranes and the merchant ships themselves were too large, had left the human scale of the city and were an obstacle to the views.

Following an almost universal pattern, the commercial port left the city and the merchant ships were replaced by cruises and transatlantic ships: the merchandise left room to the passenger, the noises and the dust ceased, the trucks became buses and the whole marine environment changed character. Now its new reality could be experienced by walking along its banks or by boat.

And this proximity aroused a new interest in its industrial heritage: there were the fantastic buildings of the docks - warehouses devoid of any use and promoters immediately saw the opportunity to develop them. This promoted a parallel distrust



Rehabilitation of Walsh Bay Fingers

in the type of development intended and the consequent struggle to defend their appearance and meanings. As a result, the rehabilitation of industrial buildings for residential purposes was imposed and the maritime front was definitively delivered to the public.

## A Bay for Leisure and Protection

With that new meaning, the maritime front moved away from the industrial one to give itself to leisure and recreation, with restaurants in the docks closest to the center, or it was used as environmental reserve in more distant places. And the water sheet was filled with pontoons on the banks, which brought the pleasure boats to the city and made their enjoyment more immediate. And all this was a new impetus for the revaluation of residences located on the sea front or overlooking the port.

Basically, what happened in the water or on the shores of the port did not imply anything new, but the new uses allowed reconciling the global sense of the port with personal enjoyment of it. It was for the people, and everyone could enjoy contemplating it or sailing over its waters without its appearance or, if you will, its built landscape, having suffered excessive mutilations. And the memory of what happened there was appropriately reminded, when one approached those great formerly industrial buildings.










Rehabilitation of Walsh Bay Fingers





Rehabilitation of Walsh Bay Fingers,
Access points and Theater





Classic Sailboat with the Opera House in the Background

## Rehabilitated Woolloomooloo Finger Wharf

Several posters located in the central access from the pier and in the interior industrial space recall the industrial history of the place, under a general rubric, *For most of the twentieth century the Finger Wharf at Woolloomooloo was a bustling workplace.* For the wharfies charged with loading and unloading the goods, working conditions were often harsh, dirty, and dangerous. Most of the workers were temporary workers. Daily work was contracted out of the warehouse doors by the 'Bull System,' aimed at selecting the largest workers and the least willing to complain. Physical deformities, broken bones, muscle tears, and lung diseases were common among warehouse stevedores.

The WWF [Waterside Workers Federation] fought to improve the conditions of warehouse workers, and often the opposition between businessmen and government was violent. Its remarkable strength and decision were diminished by the shortage of employment during the Great Depression of the 1930, which left it in a worse negotiating position.

## Industrial and Labor Memory

However, full employment during and after World War II strengthened the WWF, ended the traditional system of job auctions and improved working conditions. By the mid-1950s, stevedores had achieved pay for attendance, sick leave and annual leave, along with first-aid kits, medical care, services, and places to eat at work.

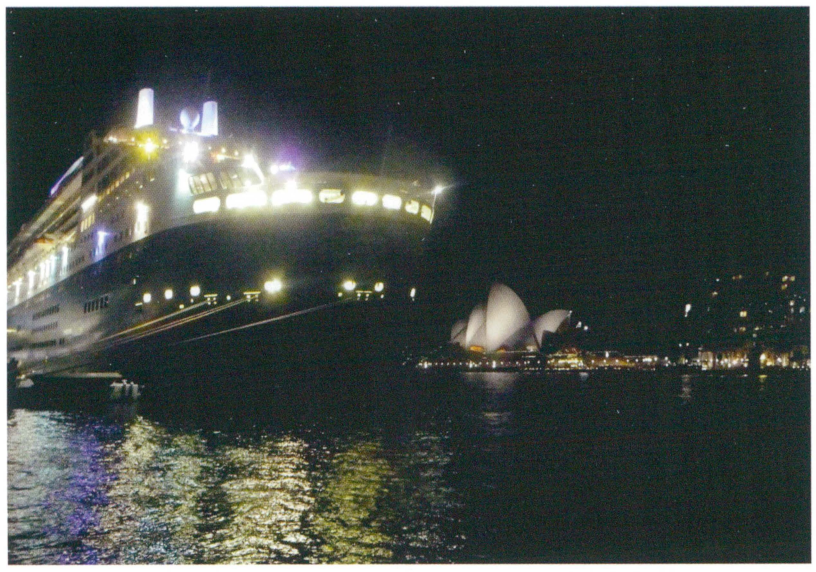
During the 1970s, new container ports, cruise facilities, and airports elsewhere in the city gradually replaced the functions of the warehouse. The work and the workers moved with them, and for almost a decade the huge building was abandoned and falling. In 1987 the state government decided to demolish the warehouse of Woolloomooloo.

After more than 70 years at the heart of Sydney's freight and passenger handling industry, the Woolloomooloo warehouse became a local landmark, symbol of the community's effort in economic development and social justice. When in 1987 the state government decided to replace the warehouse with a new marina, a barrage of protests occurred. The National Trust and the Royal Australian Institute of Architects opposed its demolition and the local deputy criticized the proposal openly. Despite this, powerful promoters and politicians supported the demolition of the warehouse: one of the supporters wanted to blow it to pieces, while the Minister of the Presidency condemned it as 'a monstrosity.'

Over the next three years, the Government, the Heritage Council, conservationists and developers argued over the future of the warehouse. In November 1990, the Building Workers' Industrial Union imposed a provisional ban on the demolition. Supporters of the Wharf formed the Friends of the Finger Wharf Inc. and supported the union's proposed suspension of the demolition, promoted the environmentally sensitive recovery of the warehouse, and sparked a great public debate to save it.

## Rejection, Boycott and Reversal

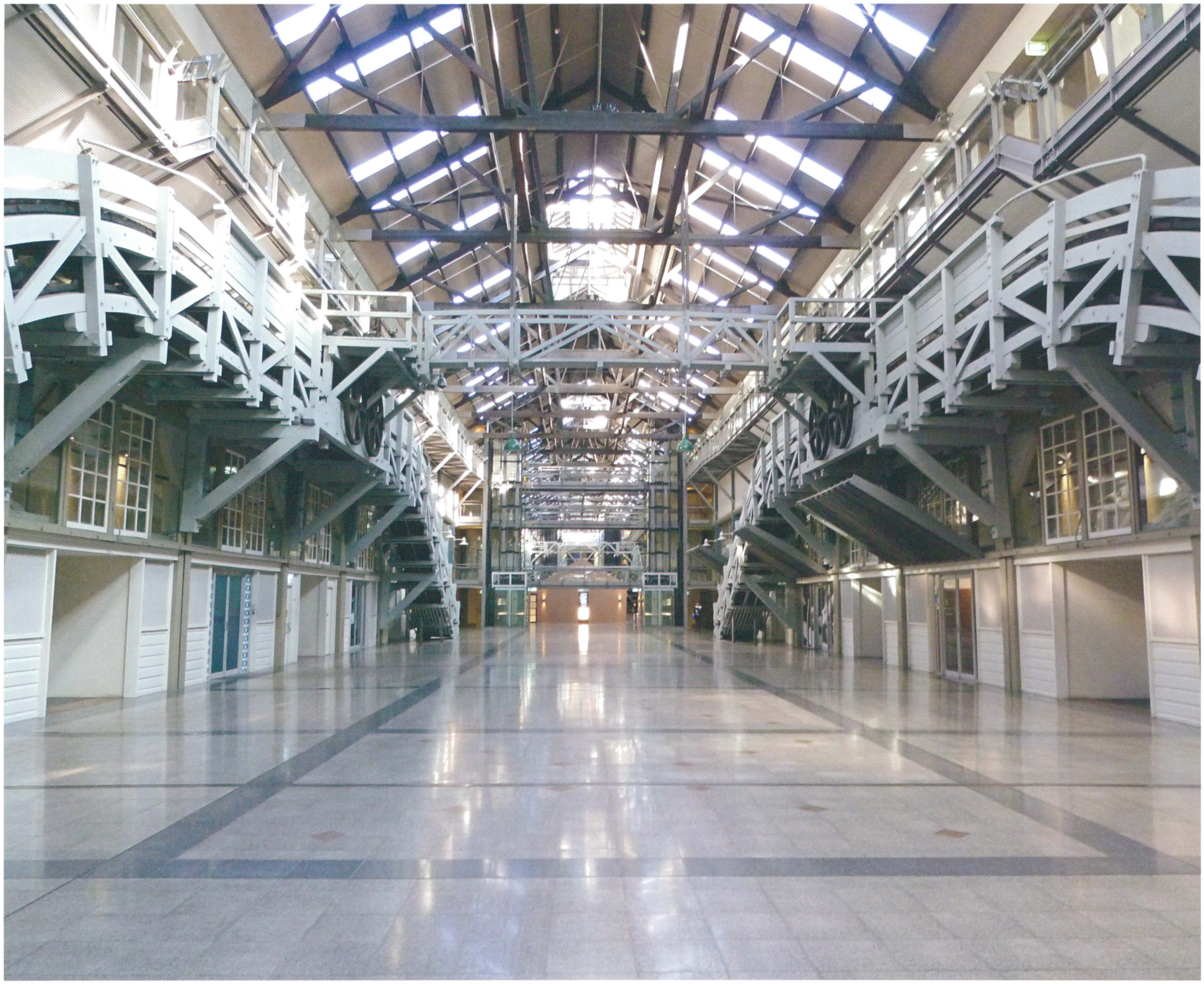
In January 1991, 120 participants with protest signs against the demolition converged in the warehouse and the temporary suspension remained in force. The government could not demolish the building, but it was not prepared to preserve it ... and after another year of meetings, debate and protest, and even another new development proposal, the government backed off and asked for recovery proposals respectful of the Woolloomooloo warehouse. The conservation plan began in 1992 and, in March 1993, the Construction Trade Union lifted the suspension and the works were able to be started at the warehouse.



Queen Mary 2, with Opera House in the Background



Queen Mary 2, from the Cunard in Circular Quay



The modular structure of the large buildings and the high level of their construction have facilitated the rehabilitation work, giving rise to an excellent example of reuse of the sea front, both in the sea area of the docks as in the most industrial area in the interior. The western part is occupied by apartments and pleasure boats moored on the shores, and the eastern part by a repair shipyard for large ships of the Australian navy. The large longitudinal buildings and the one located at its end have been rehabilitated and reconstructed to house luxury residences, restaurants and an aparthotel. Wikipedia points to Australian actor Russell Crowe as one of the owners of the large apartments located at the end of the pier.

The central access keeps the passage of the vehicles to serve the rear of the restaurants and the hotel, but the center of the long building has been respected for pedestrian use, where the four large conveyor belts are located, as a large glass lobby accessible to visitors. The high level of residences and services performed justifies the use of good materials in the rehabilitation, resulting in a sober but excellently finished interior space. Other piers of the port have also been rehabilitated, although neither the interest of the old buildings nor the proposed new uses reach Woolloomooloo's level.

Finally, another sign —elegant and poetic— recalls the original meaning of the dock: *On Sydney waterfront, the hope and toil of woolshed and paddock, the enterprise and ambition of rich and poor, the architect's vision and the engineer's skill, the tracks and roads and rails of a fledgling nation. And here they met the ships.*



## Future Meanings



Woolloomooloo Finger Wharf









Botany Bay Harbour





Sydney International Airport

*Here, hardship rubbed shoulders with prosperity and together they created this giant among the world's wooden buildings, this 'cathedral of commerce' - the Woolloomooloo Bay Finger Wharf.*

## Transfer of the Harbor to Botany Bay

For reasons already pointed out, namely, the lack of space for new containers and the blocking of views of the city, the cargo terminal was moved to Botany Bay in 1979. Almost two centuries later, Captain Phillip's rejection of the discoverer James Cook's recommendation turned around, driving out Sydney Harbour's maritime trade to leave the bay in the hands of the city and its residential uses.

There, both the lack of relief and other land uses facilitated the functionality of the new containers and bulk terminals, and a modern port of simple and efficient design was built. The port is organized around a rectangular basin, about 300 m wide by 900 deep, which serves a platform of containers on each side. The north is of longer length and also extends in the form of L with more containers, but leaves a marine environmental reserve area between the platforms and the coast, called Penrhyn Estuary. The one located on the other side of the basin extends to the south with a more irregular shape to accommodate liquid and solid bulk, very careful toward the environment.

## Sydney International Airport, 1970

A mere 600 m from the North Container Wharf is located one of the two north-south parallel runways of Kingsford Smith International Airport, or Sydney Airport, situated almost entirely on a Botany Bay landfill. In the coastal edge there is another track perpendicular to them, somewhat shorter. They were built in the late 1960s to replace the previous cross-country tracks, made in 1933. The airport was inaugurated in 1970 and shortly thereafter, one of the tracks extended to 4 km, becoming one of the longest of the Southern Hemisphere.

Bankstown Airport, control tower



At the head of the slopes are the international terminal to the west and the domestic to the east, with a third dedicated to regional transport, located to the northeast. All of them have been renovated several times and have access by Metro and motorway, although traffic congestion is permanent.

### Bankstown Airport

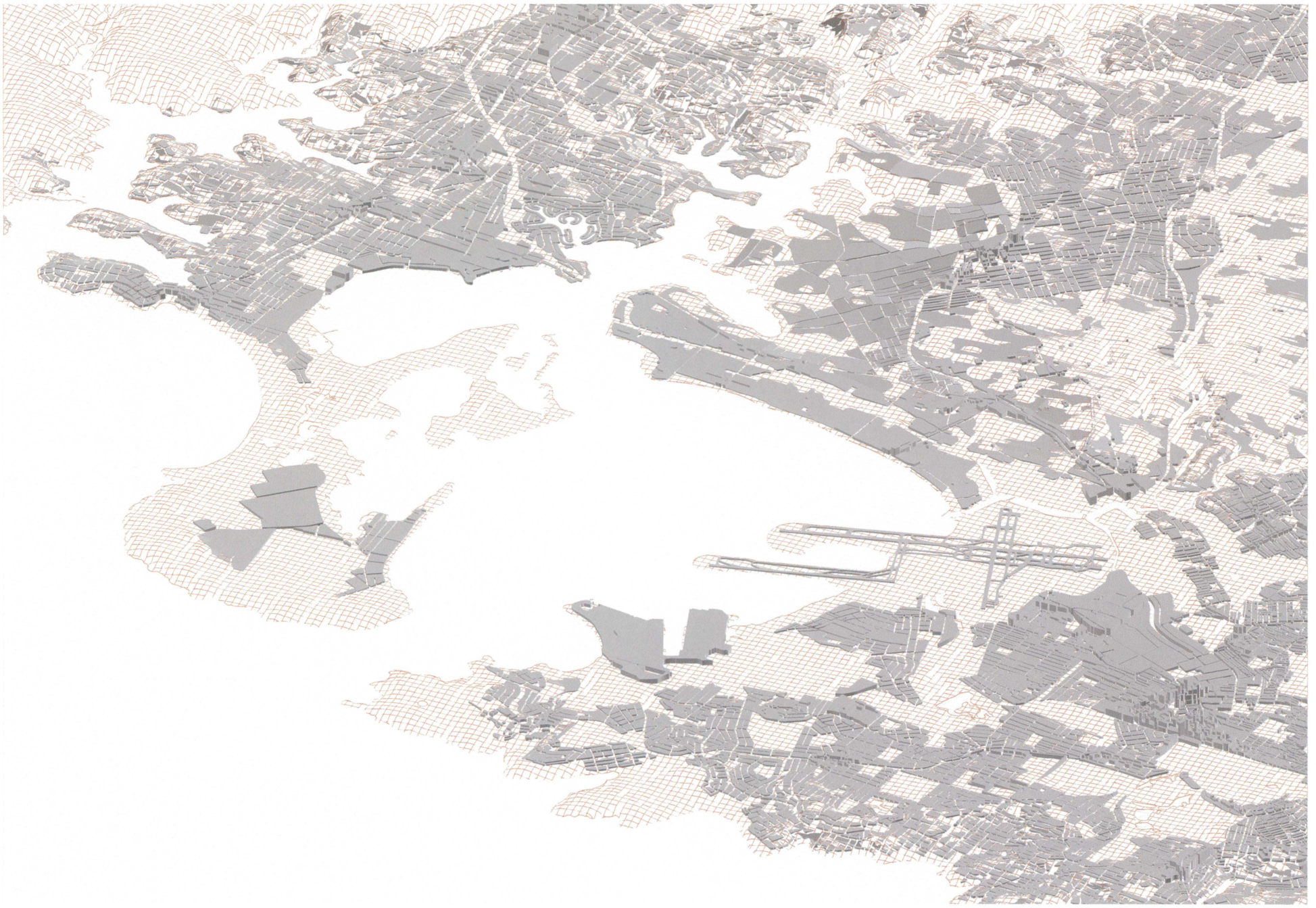
Located about 22 km from the CBD and currently dedicated to private aircraft and business traffic, Bankstown Airport was conceived in 1929 but was urgently built in just six months on the occasion of World War II, to be opened in December 1940. General MacArthur used it as an American strategic base from 1942 to 1945, when he became dependent on the British Fleet Air Arm.

It has three parallel lanes, the main one of 1,400 m in length, with a control tower, hangars and a small terminal, but its future is uncertain, because the local community does not agree to enhance its operations, due to noise.

### Interscan

Now recognized as Intangible Heritage by Engineers Australia Heritage, the Interscan is an early MLS - Microwave Landing System, developed by a group of Australian research organizations in 1973 and adopted internationally by ICAO - International Civil Aviation Organization, in 1978.

It is a precision assisted system to help aircraft to atherize in poor visibility conditions, which transmits by means of coded signals vertical and horizontal course information of the approach to determine the exact deviation of the optimal route. The system is based on hardware monitored by microprocessors and is completely solid state, with no moving components. Despite the lack of support from Australian companies for marketing, it is still used in poor visibility sites such as Heathrow Airport in London.[62]



Botany Bay

## Residential Marinas in Oyster Bay

To the west, the other side of the harbor branches into numerous coves in a low-lying area, whose coastline has been partially modified to house a huge residential area around the so-called Oyster Bay. A complex system of roads and small bridges gives access to a series of marinas, structured with streets in a spine on the axes of narrow peninsulas, so that many of the plots are at the edge of the sea.

On them, there are houses of all shapes and sizes, but in general they are smaller and appear to be younger than those located in Sydney Harbour. However, public access to the coast is reduced to a few points and is impeded in most of its development. The practical nonexistence of beaches in the whole area, aggravates the difficulty of approaching the water.



Gwawley Bay

## Environmental Protection

In 2005 the *Sydney Regional Environmental Plan (Sydney Harbour Catchment)* was approved with the clear aim of protecting the most important asset of the city-region of Sydney. As the title captures, the scope extends to the hydrographic basin of the bay, as it demands its hydraulic condition, and devotes attention to the classic environmental resources, among which the visual landscape.

Having defined the objective, in the following clause 2, it declares its public character and how this impacts the priorities: *For the purpose of enabling these aims to be achieved in relation to the Foreshores and Waterways Area, this plan adopts the following principles: a) Sydney Harbour is to be recognised as a public resource, owned by the public, to be protected for the public good; b) the public good has precedence over the private good whenever and whatever change is proposed for Sydney Harbour or its foreshores; and c) protection of the natural assets of Sydney Harbour has precedence over all other interests.*





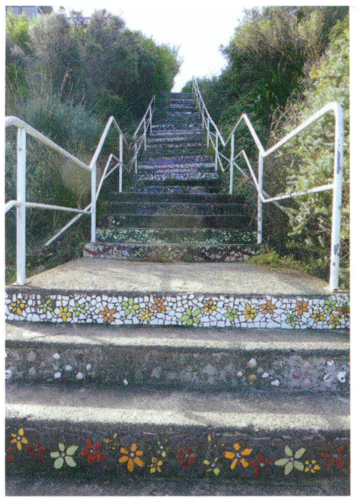


Gwawley Bay

## Protection of the Visual Landscape

Subsequently, in its part 3 division 2, this environmental plan devotes clause 25 to the scenic quality of rivers and streams, noting: *a) the scale, form, design, and siting of any building should be based on an analysis of: the land on which it is to be erected, the adjoining land and the likely future character of the locality. And in the next section, b) development should maintain, protect and enhance the unique visual qualities of Sydney Harbour and its islands, foreshores and tributaries;* all without losing sight of the quality of the water that brought so many problems to the city in the 19th century (Chapter 3): *c) the cumulative impact of water-based development should not detract from the character of the waterways and adjoining foreshores.*

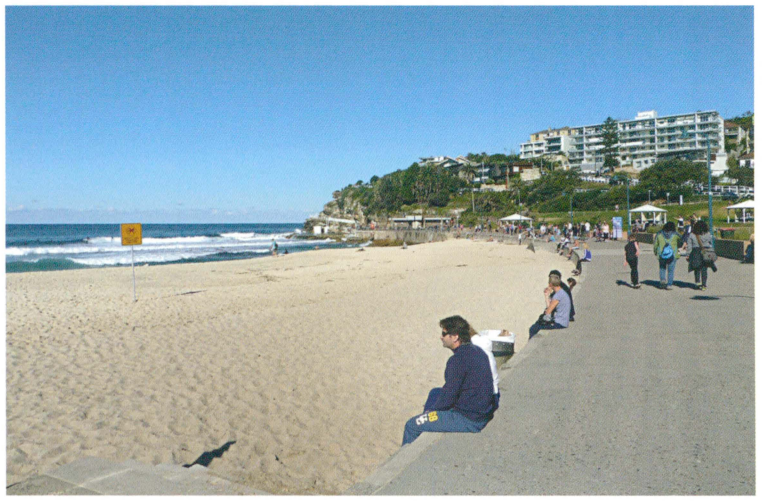
Then it enters fully into visibility problems in clause 26, dedicated to the visual landscape of the bay's watershed. With the title: 'Maintenance, protection



Coastal Walk, Gordon's Bay



Coastal Walk, Clovelly



Coastal Walk, Bronte Beach Park



Coastal Walk, Coogee



Coastal Walk, Mackenzie's Bay

## Coastal Walks and Reserves

and enhancement of views,' it considers that it should meet the following criteria: *a) development should maintain, protect and enhance views (including night views) to and from Sydney Harbour; b) development should minimise any adverse impacts on views and vistas to and from public places, landmarks and heritage items; c) the cumulative impact of development on views should be minimised.*[63]

Currently most beaches open to the Pacific Ocean have public transportation, while the smaller inland beaches and quieter waters are more difficult to access. Coastal walks are always full of people, both local and tourist, who enjoy the coastal landscape from cliffs and viewpoints. Little by little they have gone 'urbanizing' with walks, footbridges, stairs, entrances and parking, generally sufficiently respectful of the greatness of the sea.



Sydney Desalination Plant, Botany Bay.
Built by ACS, 2010

One of the best known is the *Eastern Beaches Coastal Walk,* whose most popular stretch runs from Bondi Beach to Coogee Beach, crossing Bronte Beach, Tamarama Beach, Mackenzie's Bay, Nelson Bay, Clovelly Beach and Gordon's Bay. The Victorian Waverley Cemetery and the Irish Memorial in honor of the Irish Rebellion of 1798 culturally 'enliven' a rather privileged flora and fauna tour.[64]

Associated with the beaches, there are coastal parks and reserves, usually formed by a natural meadow sloping towards the sea, like an amphitheater and surrounded by large trees. A good example is Bronte Park on the beach of the same name, chosen in honor of Admiral Nelson, Duke of Bronte in Sicily.

In coastal beaches and parks, the soil is always clean and everywhere there are waste containers and recycling areas, according to a culture that also extends to water usage. These parks have an innovative Water Recycling and Management

## Water Recycling

System (WRAMS) in the beaches that reduces contributions with underground pits and filtered sedimentation deposits.

Subsequently, the water is stored in buried tanks of great capacity and goes through a process of filtration, disinfection and treatment by ultraviolet rays to remove fine particles and pathogens, that allow using it for urban irrigation, cleaning and public toilets, returning the excess to the beaches.

## The Entrance to the Bay

The North Head and South Head make up a strategic enclave, of great defensive value but also symbolic. They mark the entrance to the important bay of Sydney, formerly called Port Jackson and are the first indication of arrival to the city. Its imposing cliffs have been treated as protected territories for biological reserve and contemplation of the landscape, with viewpoints over the bay and the ocean. Some paths allow trails dotted with traces of the past like the remains of defensive fortifications —tunnels, cameras, bunkers— and cannon artillery that dates back to the 1870s to control the entrance to the port. Its great diversity of flora and fauna, with several species in danger of extinction, is unique to these sites with poor soils, especially in the Sydney Harbour National Park.

Its special configuration propitiates its use from old, with very diverse purposes. Manly's North Head Sanctuary, traditionally known as Car-rang-gel, was a place of aboriginal medicinal ceremonies and practices. From 1828 onwards it was used as a withdrawn space for the quarantine of boat passengers of boats with suspect or infected patent, due to coming from problematic places. Some of the buildings

Fort Denison





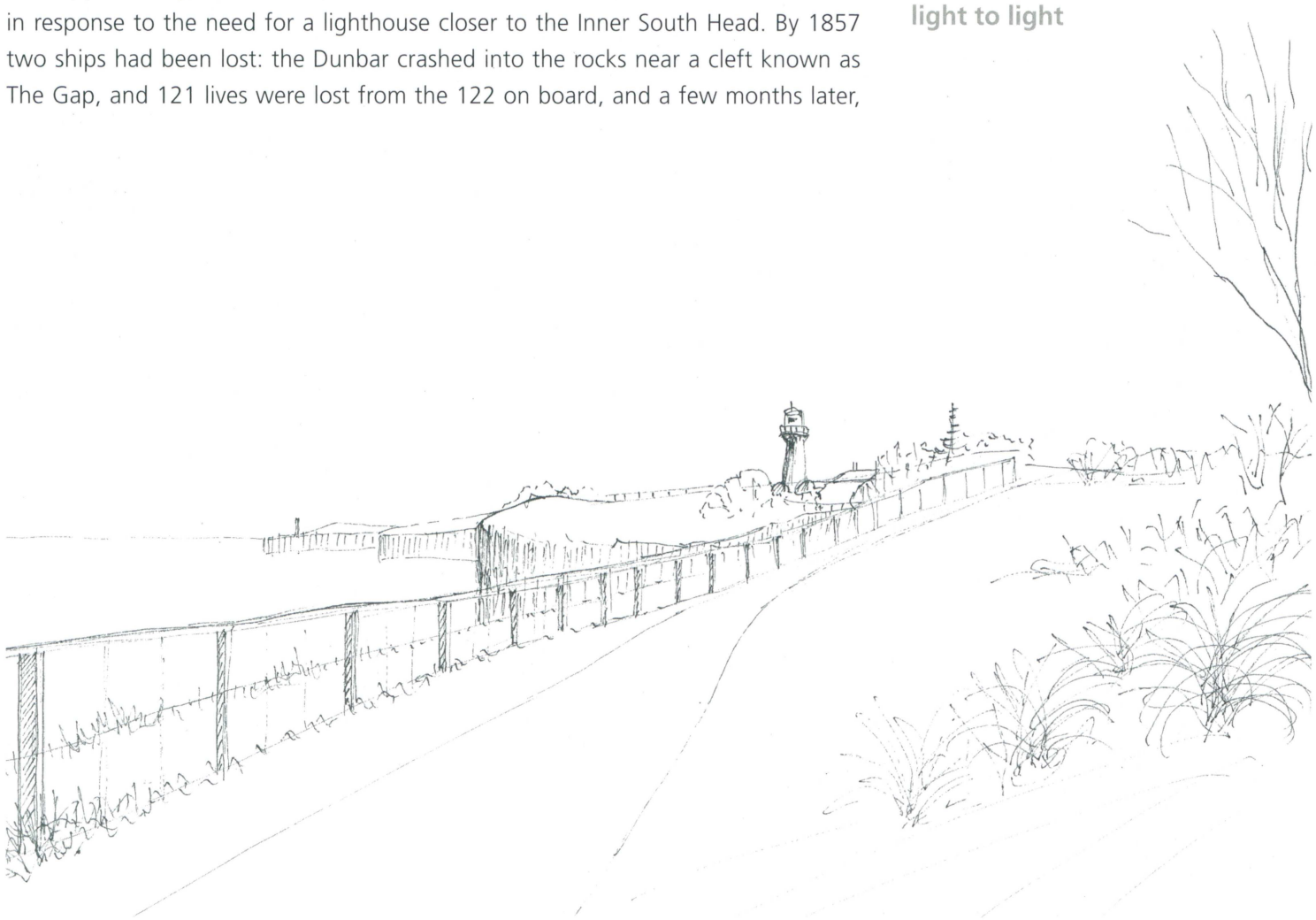
of the old Quarantine Station are still preserved, reconverted to new tourist and business uses. Close to this complex, but separated by high walls, the Catholic Church was granted land to build the Cardinal's Palace (1886) and the St. Patrick's Seminary (1889), current *International College of Tourism and Hotel Management.*

The component of fortifications and defensive pieces is more notorious in this prominent North head than in the South one, which is more tended. Most defensive coastal constructions date back to the 1930s and were complemented by the Barracks, Australia's largest barracks prior to World War II, to house and train the Army's gunners working in North Head. During that war it became the largest defense base and one of the most fortified places in the country. After the war, in 1946 the Australian Army's School of Artillery was established until it relocated to Victoria in 1998.

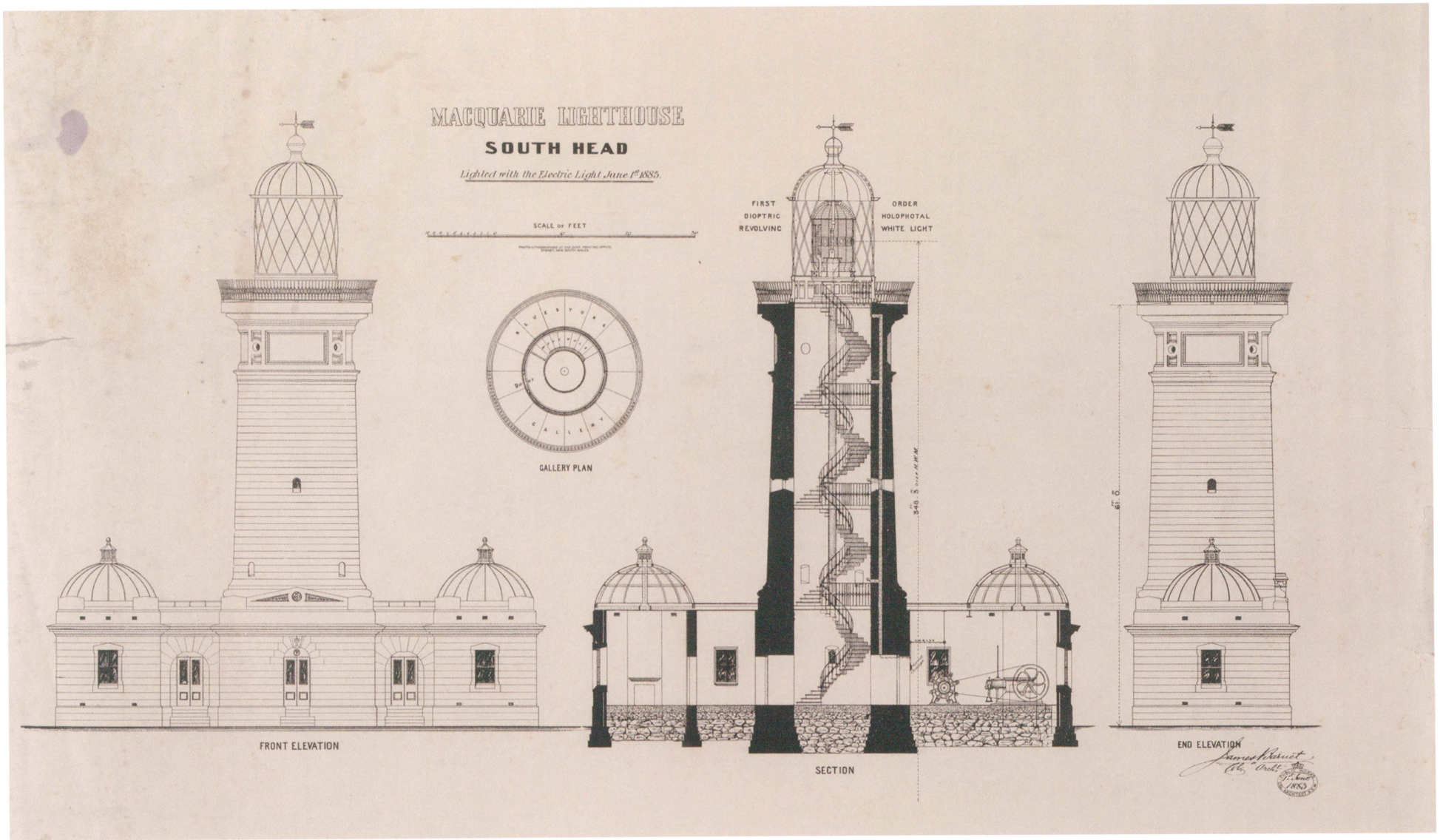
Beyond the harbor entrance and less than a mile from Sydney Cove, there was an islet that was a perfect enclave to place a fortification, something that was done in 1841, when Fort Denison was constructed and finished in 1857. Now it houses a restaurant for tourists.

On the South Head Ridge, the Hornby Light Lighthouse owes its name to Admiral Sir Phipps Hornby, Commander in Chief of the British Fleet, and was built in 1858, in response to the need for a lighthouse closer to the Inner South Head. By 1857 two ships had been lost: the Dunbar crashed into the rocks near a cleft known as The Gap, and 121 lives were lost from the 122 on board, and a few months later,

**Walks from light to light**



Macquarie Lighthouse. PHL, 2016




Macquarie Lighthouse, South Head, by James Barnet, site plan, plans section and elevation, photolith, June 1883. Courtesy of State Library of NSW, a2151019




Sydney Harbour Lighthouses

1. Macquarie Lighthouse
2. Eastern Channel Pile Light
3. Western Channel Pile Light
4. Grotto Point Lighthouse
5. Rosherville (Parriwi Head)
6. Shark Island Light
7. Bradleys Head Lighthouse
8. Robertsons Point
9. Darling Harbour Lighthouse



Lighthouse keeper houses, Hornby Lighthouse



Hornby Lighthouse



Macquarie Lighthouse




Marine Lighthouses

1. Norah Head Lighthouse
2. Barrenjoey Head Lighthouse
3. Hornby Lighthouse
4. Macquarie Lighthouse
5. Endeavour Lighthouse
6. Cape Baily Lighthouse

the Catherine Adamson was lost and 21 people died. The Gap is a gap in the cliff at the base of which there is a wide slab of cracked shale, which enters the sea and remains exposed at low tide. It is a dangerous place and conducive to shipwrecks and has also become the city's favorite place to commit suicide.

An early tourist guide to Watsons Bay and Vaucluse, published in 1911, included among the attractions of The Heads and the port entrance area all its paraphernalia of defense and navigation: Hornby and Macquarie lighthouses, South Head fortifications, The Gap - already well-known suicide site, and the Signal Station. There were ferries and trams (since 1960 buses) to bring visitors and hotels and tea rooms opened. At that time, the port entrance suggested the international modernity of Sydney as one of the great ports of the British Empire. Anchors resounded in the bay, when the liners stopped to receive the sanitary visit and the quarantine exemption: they came from *'Singapore, Shanghai, Nagasaki, Wellington, Hawaii, San Francisco, Naples, Brindisi, Dunkirk, and London'* [41:41].

The lighthouse is now fully automated and in the grassy hills the coastal defense fortifications of the mouth of the port proliferate. But the coastal road that comes bordering the cliff from the south is interrupted when arriving at the grounds of the naval base and it is necessary to travel it on the way back, without reaching the lighthouse. From the sea, however, it is located at an optimal height to provide good visibility [41:43].

The coastal road runs from Vaucluse, in the roundabout where the Old South Head Road meets the New South Heath Road and goes through a series of parks located at the top of the cliff. After passing the Clark Reserve and the Samuel and Christison Parks, you will arrive at the oldest lighthouse in Sydney Harbour, Macquarie Light, designed by the convict architect Francis Greenway and completed in 1817, whose light was *'the most modern available at that time.'*

In 1883 a new lighthouse was built to house a larger flashlight, powered by electric current, and the previous one was demolished. The lighthouse was fully automated in 1976, and the lighthouse keepers stopped attending to it in 1989. The lighthouse, mast and signal station are already historic buildings, which formed part of the reception landscape of the port entrance. Crossing the invisible line marked by the South and North Heads, under which are the quarantine station and its desolate cemetery, the passengers of the ships received a clear message of power and the *established economic colonial structure embedded in the landscape: the military base, the signal mast which represents the global reach and exchange between the maritime city and trading partners of empire, and the economic and social fault lines running through the city* [41:61].

## Taronga Zoo

Located on the north shore of Sydney Harbour in Athol Bay, where you get aboard a ferry that leaves from Circular Quay, Taronga Zoo is one of the cultural referents of the city. It has its own pier and a cable car that allows climbing to the north where the main access is located. Its history begins in 1916 when the NSW Zoological Society decided to relocate the animals of the Moore Park Zoo to a new location. The southern slope of Hawkesbury Sandstone was chosen as the new site, where there was a quarantine station for settlers, whose facilities were incorporated into the new zoo [28:21].



Sydney Harbour Bridge from Taronga Zoo

The Indian Elephant House,
Taronga Zoo




Lower access, Taronga Zoo





Taronga Zoo

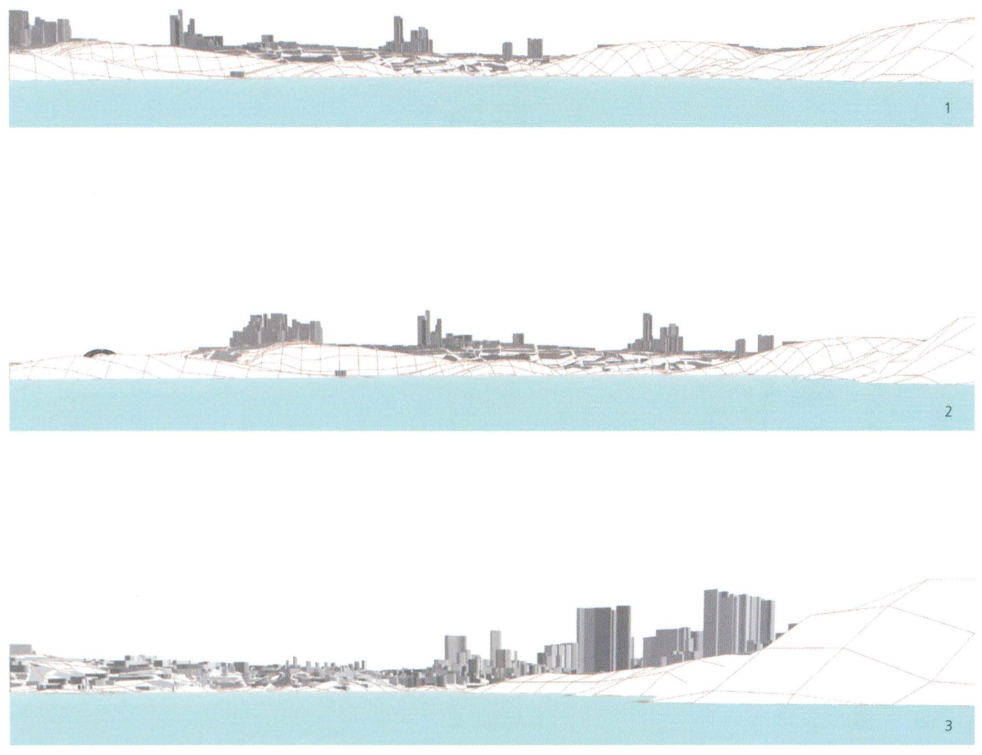
One of its founders, Director Albert le Souef, decided to take advantage of the 17-acre sandstone terraces as a new opportunity to create a new way to display animals. Taking as model the Tierpark Berlin zoo of 1907, a series of moats were created avoiding the traditional cages and barriers, to get maximum integration in the natural environment. This theatrical design recreated natural scenarios where the animals seemed to be at liberty and became a referent worldwide.

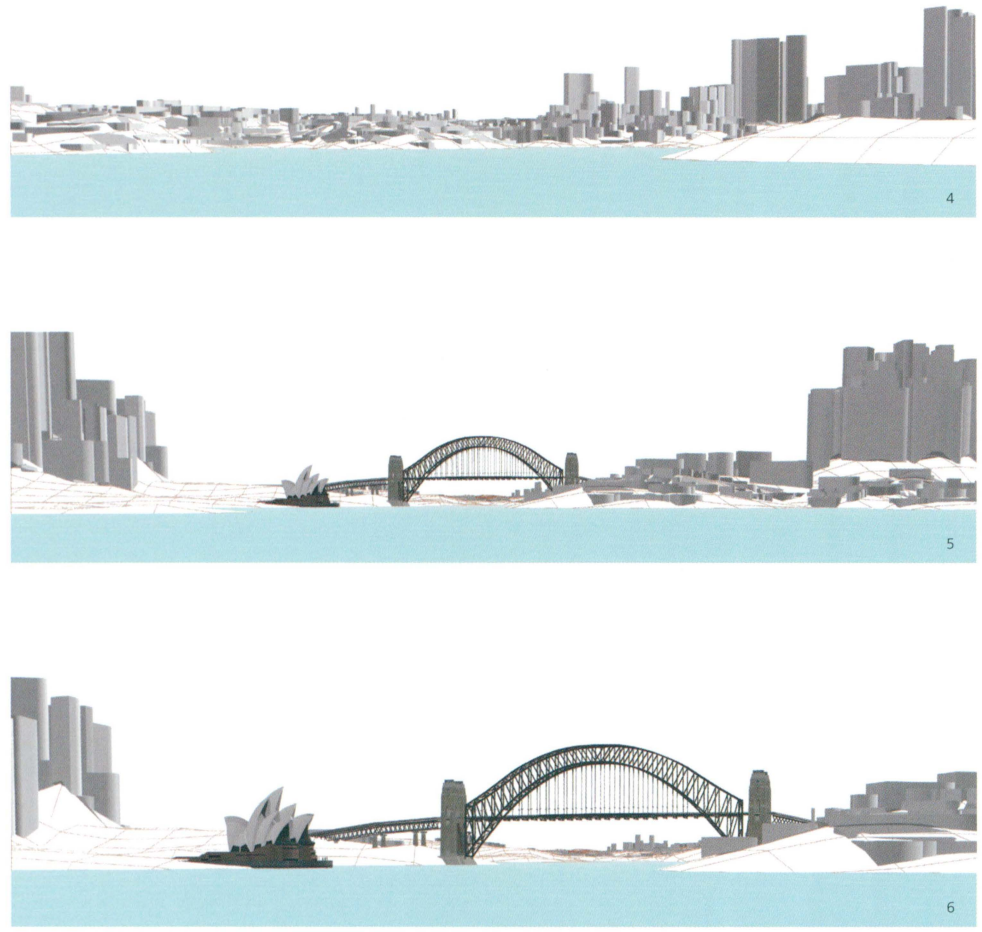
After several changes over time,[65] in 1967 Ronald Strahan took the lead with a new policy based on education, research and animal conservation. In 1971 a plan was developed with landscape criteria, defending the maintenance of existing vegetation and the use of materials such as natural wood and annealed bricks. Australian native species, both plant and animal, were introduced and their display conditions improved, taking advantage of adjacent areas with native trees and shrubs, which had a small presence among the profuse vegetation. As of 2004, a profound reform has been carried out, with several staggered actions.[66]

## The Visual Landscape of the Bay




Views of Sydney Harbour from the ferry trip from The Heads to Sydney Harbour Bridge





Sydney Harbour from Taronga Zoo



Entrance to Sydney Harbour



Watson's Bay

## Accounts of a Journey

To understand the intimate connection between the bay and the city of Sydney it is useful to resort to its scenographic capacity when it is unveiled as a tour. And the most interesting story is the one of its discovery when entering sailing from the mouth flanked by the heads. The current traveler who arrives by boat to Sydney, probably has in his memory many previous images of the bay and among them, the bridge and the Opera occupy a prominent place. They will be powerful and indisputable images, undoubtedly, of an identity between the remembered and the perceived, which will act as objectives of the journey, as an anticipation of the peak moment of arrival.

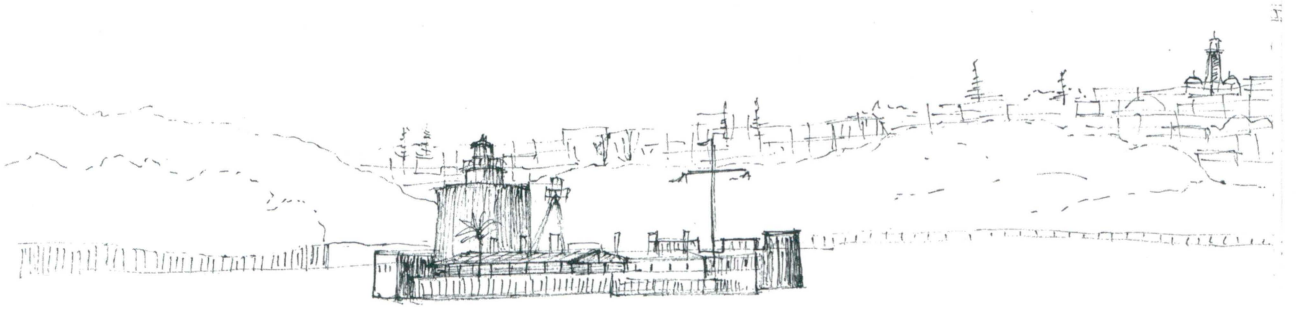
But the sequence of unveiling is as much or more attractive than the vision of the arrival, confirmed by the appearance of the two goals stored in memory. There is a first anticipation of the great arch of the Harbour Bridge from South Head, or above its pointed end if one arrives in a great cruiser or in a transatlantic liner of sufficient height. It is not visible in its entirety, but the appearance of an arched black geometric form, on the blue of the water and the green and earthy tones of the interposed banks, is unequivocal: it deserves the classic 'land in sight!' or the legendary 'there she blows!' of Melville.



Sydney Harbour



Cremorne Point



Fort Deninson, Macquarie Lighthouse. PHL, 2016

With the aim well placed, the advance of the ship alters both the point of view and the presence of intermediate visual obstacles, whose shape and position are modified with the march and with the changes of course imposed by the path. Some of those present in this rite of access make use of their previous visits and offer names and keys of the visual progress that build a story.

—That's Middle Head,... there's Vaucluse,... that cove is Rose Bay,

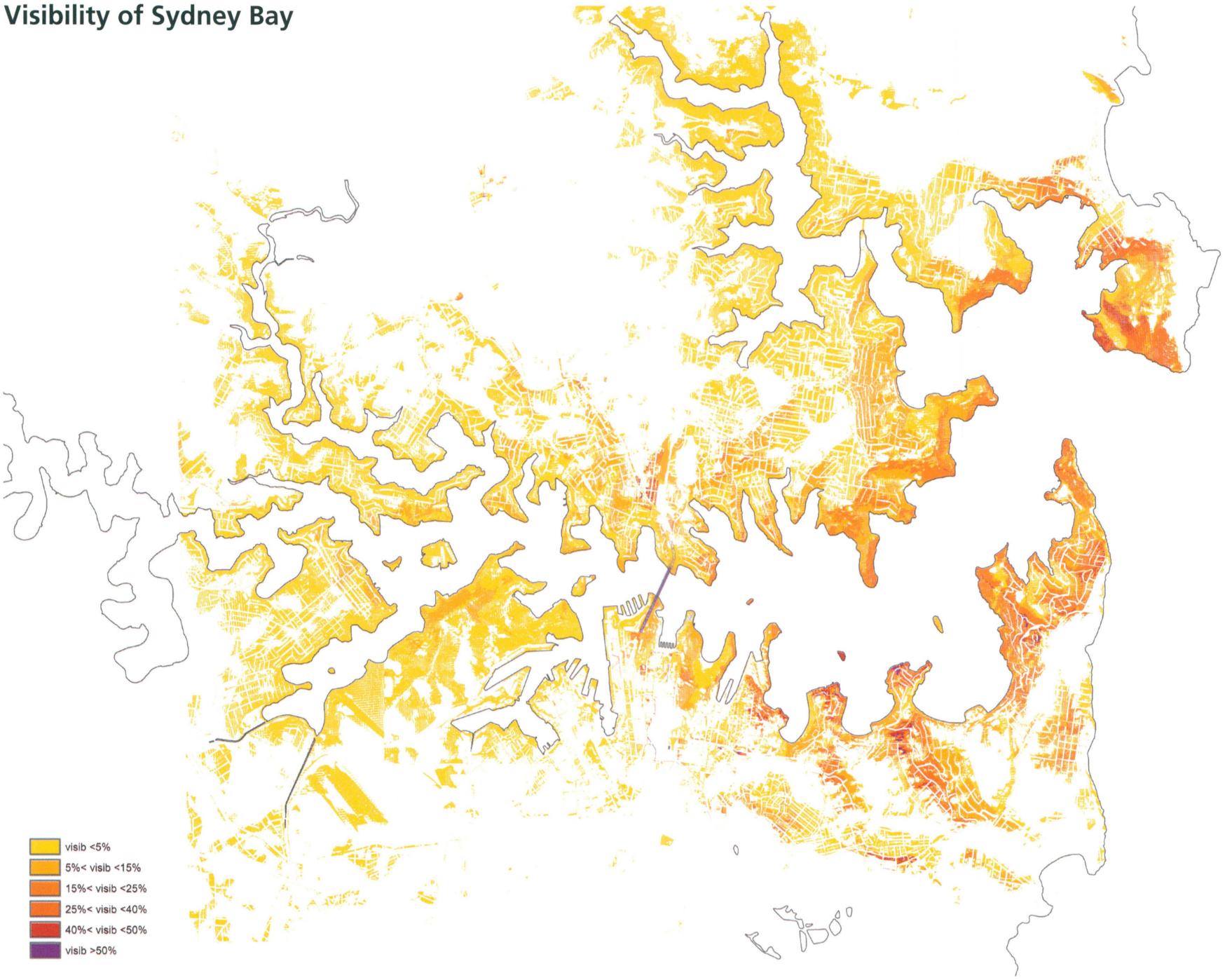
—That promontory is Bradfield's Head, where the bridge will appear to us in all its splendor.

Then the Opera House appears and, at that moment, the trip is condensed in the image and the ecstasy, always expressed in exclamatory terms of beauty, as seen at the beginning of the book. The now inevitable photos distract and dilute the moment, but it is imperative to record:

—I was there.

And with duty fulfilled, the euphoria disappears and self-affirmation is essential to compensate for the downturn. The bridge and the Opera together, with the high buildings of the city in the middle, explain the meaning of the port and confirm, like the classic Guide Bleu, that *the trip was worth it.*

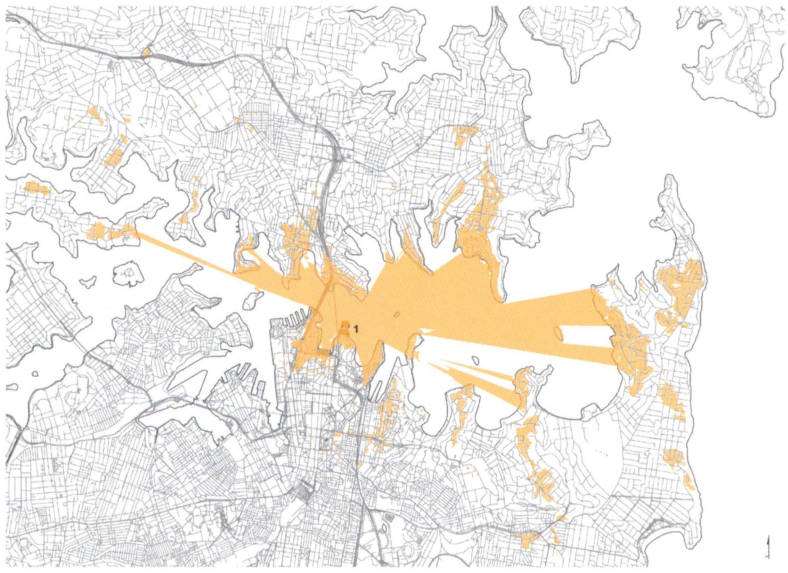
## Visibility of Sydney Bay




Visibility studies focus on the bay, as a unique feature of the Sydney landscape.

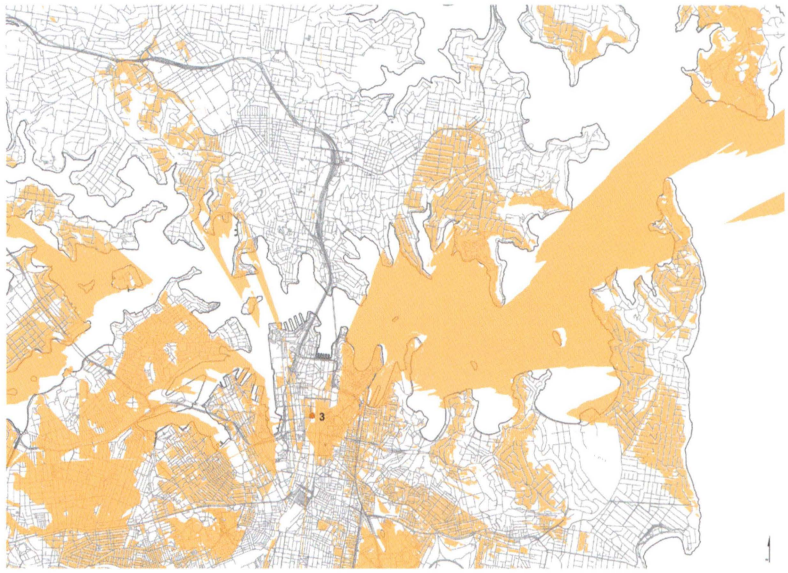
In the study of visual basins, the area of visible territory is analyzed from significant points of observation, such as the Opera House, Sydney Harbour Bridge, Sydney Tower, Observatory and Taroonga Zoo. They are isolated points in which stops are usually made for their historical-cultural interest and / or for their natural value as lookout.

Visibility study of Sydney Bay from the surrounding territory. All the points of the analyzed territory are represented in the map, with a value, in percentage, of the surface of the bay visible from these.







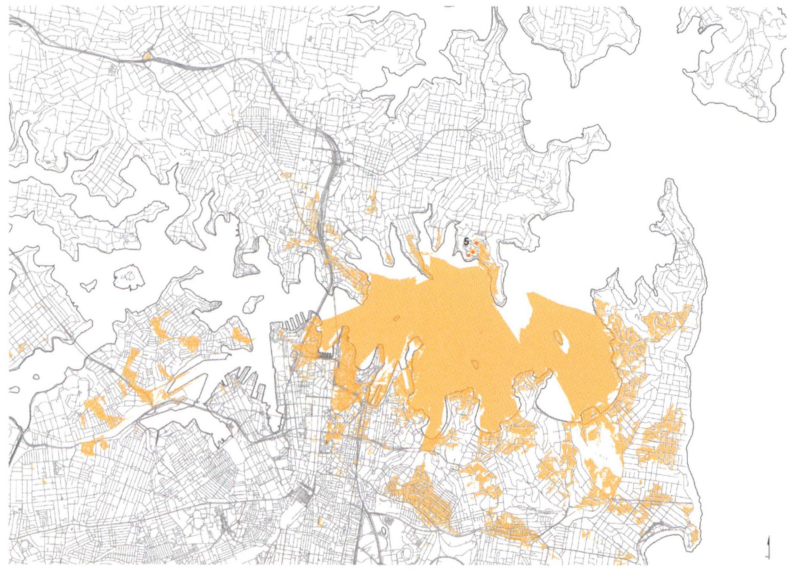






Area (percentage) of bay visible from the following observation points, considering the bay from the access heads.

| | |
|---|---|
| 1. Opera House | 27.60% |
| 2. Sydney Harbour Bridge | 64.73% |
| 3. Sydney Tower | 64.45% |
| 4. Sydney Observatory | 23.60% |
| 5. Taroonga Zoo | 23.58% |





First train across Sydney Harbour Bridge carrying Dr. J.J.C. Bradfield.19 January 1932 Courtesy of State Records NSW: 12685,Sydney Harbour Bridge Photographic Albums, 1923-33, 12685_a007_a00704_8733000130

## Landscapes and Contrasts of the Event

From a very early stage, the people of Sydney have flocked to certain events which they like to celebrate together, and which prove capable of lasting in the memory as a substantial part of certain places. Some are unique, but others are repeated and are still alive today.

Among all of them, and in addition to the echo of those alluded to throughout the book, there are some of likely or sufficient interest to link to the landscape by themselves. Sometimes their footprint lives beyond memory and configures or integrates into character traits of landscapes, buildings and people.

**Execution in Front of the Crowd**

Perhaps the first of these occurred in 1844, when the murderer John Knatchbull was hanged outside the door of the Darlinghurst prison, in a great public event contemplated by more than 10,000 people. It was not unusual, because there were other 75 executions until the last in 1908, nor alien to the city, totally dominated by the building from its high location.

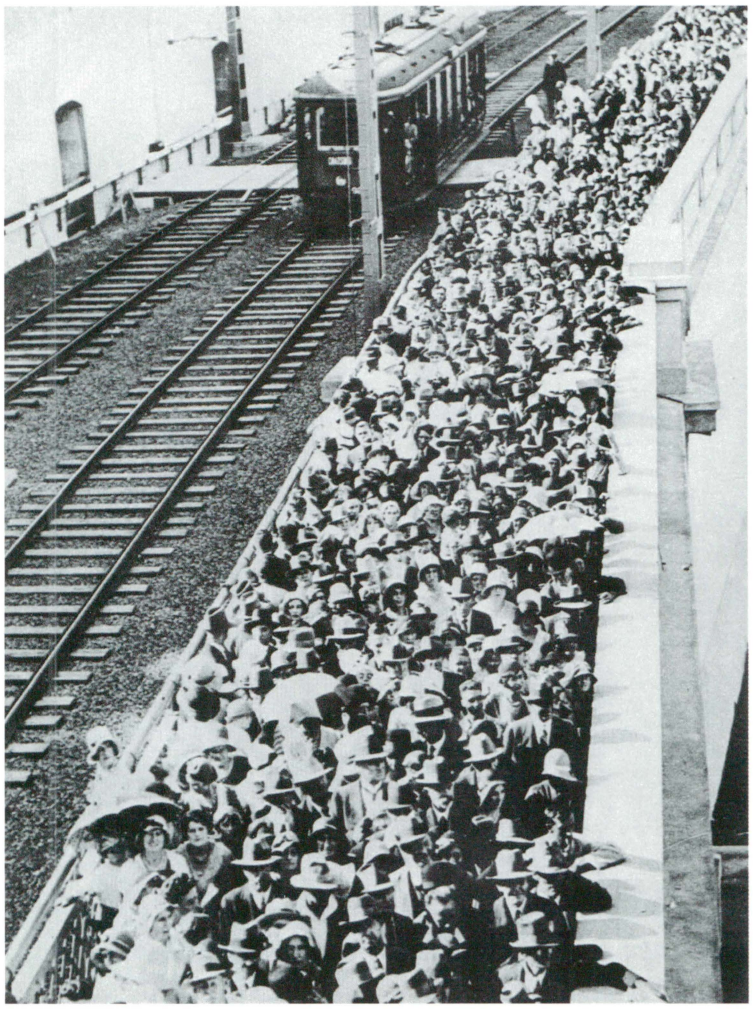
Shortly before, when the prison was completed in 1841, a long procession of inmates and prisoners walked from Bridge Street to George Street, crossed the Domain and up the hill on the South East Road, in a bitter and miserable anticipation of the many parades made later along Oxford Street [41:171].

**Harbour Bridge Inauguration**

However, the most important day was Saturday 19 March 1932, when more than a million Australians crossed the Harbour Bridge on the day of its inauguration. Until then, no other event in Australian history had attracted such a crowd. *The city and suburbs were deserted during the long hours of the celebrations, and afterwards people on foot and in motor cars streamed over, many peering down at the swirling waters below in new amazement. Its sheer scale and the disruption to the city and the north side of the harbour had dominated their lives for seven years but it was to stand as a symbol during the Great Depression that better times were possible again. Now after 50 years, Sydney's 'coathanger' is still there, a familiar feature of the landscape which Sydney siders cross 100 million times a year. This book celebrates the bridge's 50th birthday and its role in Australia's heritage* [59:1].

Thus began the extraordinary issue edited by the Sydney Morning Herald [SMH] to commemorate the 50th anniversary of the opening of the Harbour Bridge. After pointing out some information about the construction of the bridge and its protagonists, the newspaper recounts the ceremony, started by Governor Sir Phillip Game by reading a message from King George V, the uncovering of the plaque, the cutting of the blue ribbon by the south access and the official opening statement. Then the sirens of the hundreds of gathered ships sounded, the salute of 21 cannons, and the parade of a row of ships below, and a squadron of the Gipsy Moths of the Royal Aero Club above began, and the parade displayed itself along the causeway of the bridge with all its magnificence. Then the crowd began to cross the bridge after a cavalcade of floats with allegorical motifs and motor vehicles creating the first great bridge jam, passing in front of the large stands located at the entrances.

After the children, the bridge workers and the aborigines, the parade continued with the historical floats, those of the main industries and the ones decorated with flowers.





One million delighted people cross the bridge on its inauguration day [59:23]

Thousands of cars try to cross Harbour Bridge on its inauguration day [59:27]

The chariot dedicated to the landing of Captain Cook at Botany Bay in 1770 carried a model of the HMS Endeavour, the one dedicated to the wool industry commemorated John Macarthur and his famous *merino sheep,* with a model of Elizabeth Cottage of Parramatta where they were being raised. Another float was dedicated to the federation of the colonies in the Commonwealth in 1901, represented by young people around a great sedentary figure, with the shields of several States. The cannons of World War I collected the participation of the men and women of the Australian troops [59:34].

Something unforeseen occurred during the process: while the Minister of Works made his speech, a young man on horseback dressed in military uniform and full of decorations approached the ribbon of the south entrance and cut it with his saber, declaring the bridge open *in the name of the loyal and decent citizens of NSW.* The rider was the captain Francis Edward de Groot, an Irish fighter from World War I and then antiquarian in Sydney. He was taken to a mental health center in Darlinghurst, fined for offenses and released, but in the meantime the tape was recomposed and the Prime Minister was able to cut it *officially* with scissors and the parade began.[67]

These scissors returned to prominence in 1981, having been exposed a few years earlier in the State Parliament on Macquarie Street, where they had been kept. A group of Americans reclaimed the scissors, claiming their use at the opening ceremony



Sydney-Hobart 2013 [Source: note[68]]

of the Bayonne Bridge between Staten Island NY and Jersey City in 1931 and that they had been loaned to the NSW government for the opening of the bridge, although on one of its blades an engraving read *Presented to Hon J. T. Lang by Dorman, Long and Co Ltd, contractors. Opening of the Sydney Harbour Bridge, 19 March 1932.*

*Born in such a turbulent era, the Sydney Harbour Bridge has grown to middle age with no visible scars. It is still the same old bridge, despite some major changes in the approach routes* [59:33].

## Sydney- Hobart Regatta

In Sydney, regattas also gather crowds, especially when the city is not just a starting point but a the headquarters or part of the course. The waters of the port are filled with boats that accompany the competitors until they surpass the heads, and the banks of the bay are filled with people, especially those of the South Head, which are lower and allow a closer view of the ships.

The harsh Sydney-Hobart regatta leaves Sydney on December 26 every year, since 1945, towards the city of Hobart located 630 miles away in Tasmania. It is a great spectacle, from the preparations and the trainings to the multitudinous exit, bordering South Head directed towards the South. It usually lasts a couple of days, sometimes very hard days because of the wind and sea conditions, which are followed in Australia



Fireworks New Year's Eve 2015 [Source: note[70]]

and around the world, especially since 1998, when a major storm killed six crew members and only a quarter of the participating ships reached port.

Each New Year's Eve, fireworks launched from the Harbour Bridge mark the upper surface of the arch, the line of the board and its accesses, with an extra outline of the silhouette of the Opera House by means of radial traces to its ridges. At the end of the noise, a dense swarm of all kinds of ships sound their sirens from the waters of the harbor. The bridge, the Opera and the port are again the protagonists before the world of a whole ceremony of light.[69]

## End of the Year, End of the Millennium

New Year's Eve celebration in Sydney gets millions of TV viewers around the world, being the most important to be celebrated. That is why it has become a remarkable event and its high budget is carefully invested, with a long previous planning and design undertaking.

The bridge is usually the visual vehicle for that design with punctual support from the water, subject to thematic variations every year. The sequence is usually structured in four moments: the first is celebrated at 8:00pm and is dedicated to the Aborigines, which free the place of evil spirits, and to recognition of the country. An hour and a half later a parade of boats that compete with lighting designs related to the chosen



Olympic Park

theme comes out. The crews of the top five are invited to the mayor's party, which is usually held in the esplanade of the Opera. Finally, at midnight fireworks are launched to greet the New Year.

Each year the central motif of the bridge varies, from 'the dove of peace' to an 'hourglass.' In celebration of the centennial of the Australian Federation in 2000-2001, the motif was the federal star and a multicolored snake. The previous year celebrated the new millennium with 'a smiling face' and the word 'Eternity.' In recent years the number of barges with pyrotechnic castles has increased and new range projection techniques spread the light beam festival all over the bay, although the bridge continues to 'come alive' every year.

## Sidney Olympic Park, 2000

That same year 2000 the XXVII Olympic and Paralympic Games were celebrated in Sydney with headquarters in a park built on an old landfill. Located in Homebush Bay 14 km west of the city center, an area that had not been used for a long time until it was selected as the location of the Olympic facilities.[71] Due to the long contamination during years of the terrain, works required the removal and treatment of many of its grounds. As a result it left a green landscape, with more than 50 ha of natural forest, large mangrove areas and 24 km of continuous virgin coastal front with reserves for birds and other species.

The large sports, cultural and leisure complex was built in 1996 and, in addition to the sports facilities (ANZ Stadium, Allphones Arena, Sydney Showground, Tennis Centre...), it comprises several parks and wetlands, becoming a fundamental piece in the urban structure of the city. After the expected mass gathering and civic pride of the Olympics [9:94], the park hosts many of the city's sporting competitions, exhibitions and shows, staying active with more than 5,000 annual events. And the surrounding area was reconverted with the establishment of numerous offices, shopping centers and accommodations for tourism. Parks have also grown, especially in 2007 with Blaxland Riverside Park, an urban park along the Parramatta River, with a jetty.




2
3






Sydney Olympic Park



Diner en Blanc



## Diner en Blanc

There are also recurring parties in Sydney. By 6 pm on November 28, 2015, streets, subways, buses and ferries across the Sydney metropolitan area began to fill up with groups of people dressed in white, with tables, chairs, bags and white iceboxes in their hands. Once in the street or on the pier, they all moved in the same direction that turned out to be the esplanade of the Opera House. After the unavoidable checks, they arranged their tables and chairs neatly in long lines, left their bags there and took possession of the place by walking or chatting in groups. Toasting with champagne also seemed obliged, taking pictures of the white crowd from the grand staircase or with the building and Harbour Bridge in the background.

It seems that this scenario came about 1995, when the French François Pasquier and a group of Parisian friends put into practice a multitudinous idea. It was a celebration of a mass dinner dressed in white in a secret place, whose name was not discovered until very shortly before its celebration. It was a question of summoning people, originally unknown to one another and of different origin, to share a dinner and to know each other while participating in something of a certain scope.

Part of the magic of the event lies in not knowing the location, only revealed in the network at the last minute, with just enough time to get there. The attendants are asked to come dressed in white and must bring with them a white tablecloth, white chairs and a table. It is also suggested to bring your own food and drink, although it is possible to request it from the organization when you register.

The following day, the press noted the *Diner en Blanc* of more than 4,000 people and commented that the previous year more than 3,000 guests participated in the dinner in Sydney's Centennial Park, adding that in 2013 it was celebrated in Bondi Beach and that the Museum Of Contemporary Art was its stage in 2012.






Wedding in Dawes Point

But each one has their personal party and many go beyond simple contemplation of the beauty of the landscape and want to integrate it into their own events. Selfies with iconic Sydney Harbour background elements are a first appropriation of their image and are a source of endless 'likes' on social media. But the matter has more mileage and in Sydney many couples decide to marry outdoors, with some of those places as the stage.

## Open Air Weddings

The business has flourished for years, and companies are multiplying their *Open air wedding* offerings, under the Harbour Bridge or with the Opera House in the background. These offers appeal to more or less invariable attractions: the open air, mythical places, views of the port, iconic character, varied scenarios.

It is the landscape of Sydney that is on sale and in this the whole city participates, including its institutions. The Botanic Garden advertises itself as follows: *The Royal Botanic Garden is one of Sydney's most iconic outdoor venues, with stunning backdrops of Sydney harbour and the city skyline. It is the perfect place to celebrate your special day, with twelve breathtaking locations to choose from.*[72]

## Mardi Grass Parade

Larger reach has the Gay and Lesbian Mardi Gras Parade, which was first held in 1978 and marked a major social and political change. With that celebration, a certain 'spirit of play' entered into the Australian awareness of homosexuality. With that carnival atmosphere, artists and the public of Mardi Gras deal with the disorder from the legality of organized leave and face the threat of social fragmentation by rebuilding the community in a spirit of lightness and freedom.

In this sense, as Susan King asserts, Mardi Gras retains much of the old roots of carnival: the loose and mocking spirit, its vulgarity and the ostentation of the flesh, *it recovers for us, within the complexities and divisiveness of modern living, a sense of*

*wholeness.* Deep down, Mardi Gras has *an unspoken, powerful fictional presence, one which is much darker, more violent and less about the sense of wholeness... it turns to carnival for its ambivalent outrageousness; its subversive, disruptive potential which may be transformational, purely destructive, or both* [41:126].

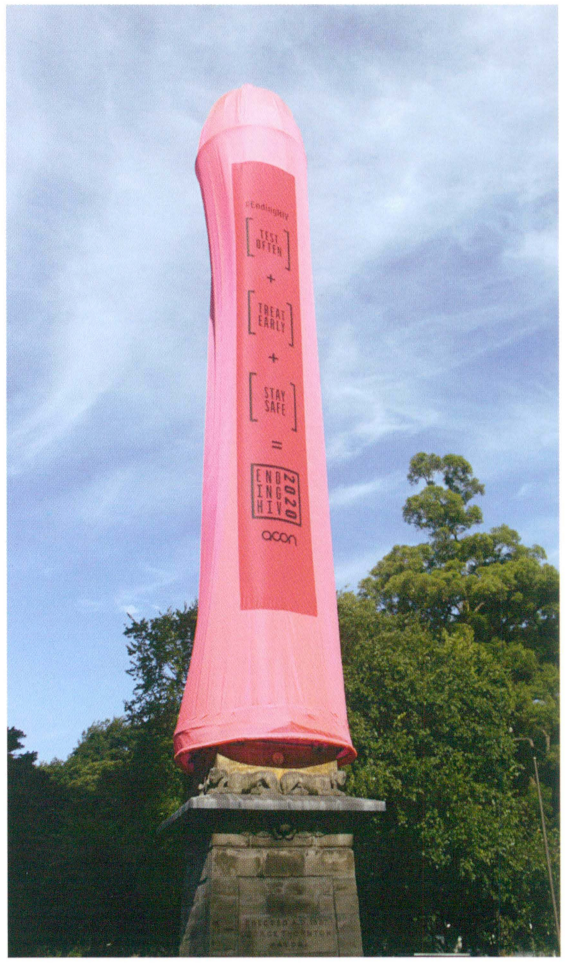
Except for 1980, Mardi Gras has been operating continuously in Sydney since 1978, and has become an international tourist attraction, capable of mobilizing more than one million people, in a totally commercialized operation that also retains its political inclination. In 2012, the words 'Gay and Lesbian' were removed from the title apparently to make the parade more inclusive and also to attract a wider range of corporate sponsors. It seemed that formerly subversive Mardi Gras had been absorbed into the mainstream but, as of May 2013, the name returned to the original [41:125].

### Keep Sidney Open

Another demonstration in defense of the festive and in opposition to the early closures of bars and premises, that have destroyed the nocturnal life of Sydney, is the one celebrated in February of 2016, under the motto:

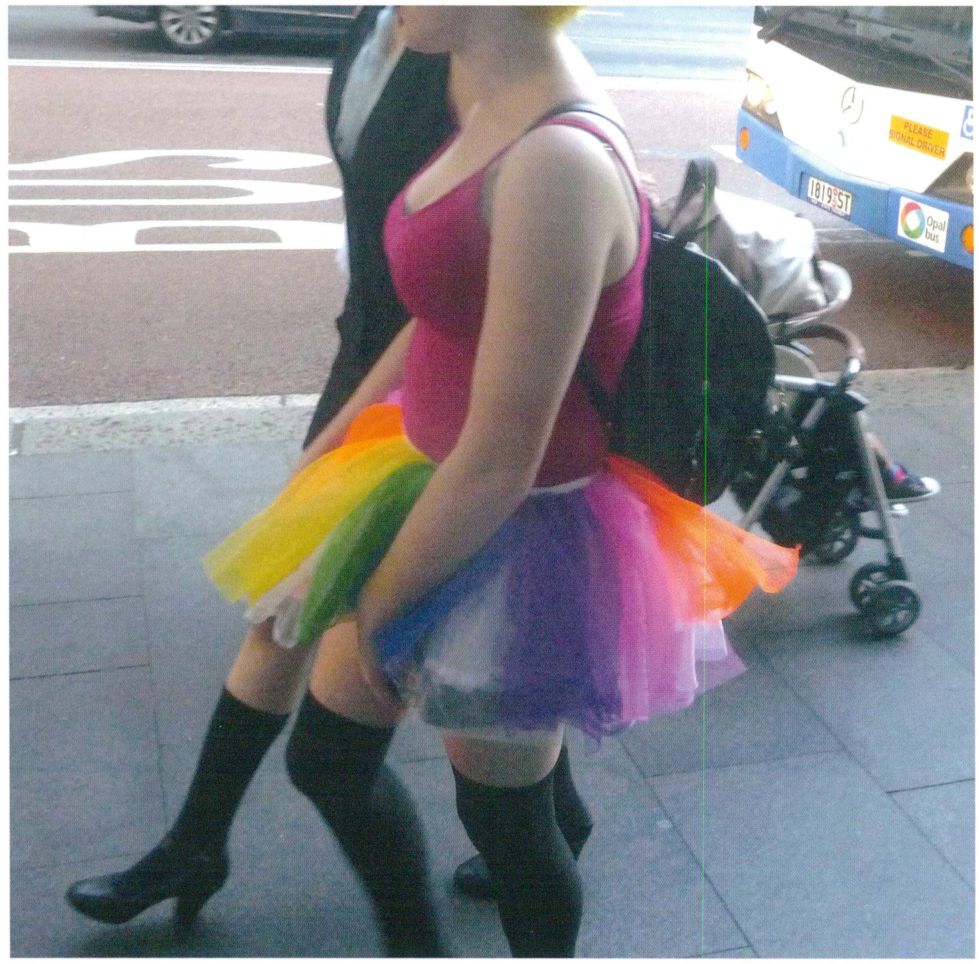
*We support safe nights in a global city. We support live music.*
*Our mission is to keep Sydney open!*

In 2014, following the death of two teenagers in Kings Cross,[73] a series of prohibitions and closing times were introduced which, according to the organizers, are destroying




Hyde Park West Obelisk with a Pink Condom

Mardi Gras, Sydney



the nightlife in Sydney. Since then, violent attacks have declined by thirty percent and many night clubs and strip clubs have been replaced by yoga sites, health food stores, intimate restaurants and bright lights. But there are also fewer people walking down the street, they have closed more than 40 nightclubs without being replaced and, above all, the echo of the measures has moved to the center and other districts of Sydney, seriously threatening the vitality of the city's nights.

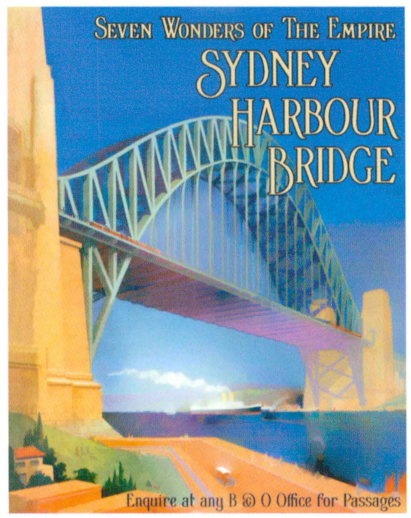
Those affected claim that crucial live *music venues in Sydney have closed, several hundred jobs have been lost and the magic around our city is fading. All this for a minimal impact on violence, which was shown to be in decline since small-bar licenses were granted in 2008.*[74]

## Touristy Landscapes

The attraction of the landscape mobilized tourism and, in turn, was used as a claim for new tourists. In 1984, the Australian Tourism Commission hired actor Paul Hogan to star in a series of commercials, standing on the top of the bridge, with the Opera behind in an attempt to lure the Americans, which was quite successful. In 1993, the Opera House and Harbour Bridge were the only prominent places in international advertising campaigns, which did not require legends or explanatory narratives. Although of course there were always references to indigenous culture and images of kangaroos, desert, beaches and coral reefs, the emphasis of the campaigns was on the bay and its two icons.



Terraces at the Edge of the Opera




*Seven Wonders of the Empire-Sydney Harbour Bridge,* travel poster




*American Airlines Australia,* travel poster. United States, ca. 1970




*Fly Canadian Pacific Australia - New Zealand,* travel poster

After the Olympics, the bridge and the Opera played the role of instant icons, when cities competed hard to attract business and tourists, and the city brand became the target of governments, courting tourists and business investment. In 2006 and 2007 Sydney was chosen as the best 'city brand' ahead of London, New York and Paris. But not so much because of the number of visitors attracted, but because of its 'overwhelmingly positive image,' a generally memorable impression formed during years of exposure to iconic spectacles and images [35:306].

Subsequently, the effect of tourist *'success'* on the city is clearly felt, as in other large cities, such as Barcelona or London. The shops, the streets, the souvenirs and the whole city already show the symptoms of a contagion that becomes especially uncomfortable in its two main protagonists, the Opera and the bridge.

## Souvenirs and Activities

On the one hand, there are the obligatory bad taste objects, apparently required to satisfy any remote cultural background and attract the tourist to buy fearsome 'souvenirs,' in the form of engravings, models, fold-outs, bracelets, keyrings or any other support able to carry the image of the tourist icons.

On the other, there are the activities set up to attract the attention of tourists and encourage them to use and enjoy spaces, monuments or buildings, in a more participative or, at least, not just contemplative way. After the objective of being of interest to children, this last advertising resource has exploded and been redirected towards all types of audience. Stories are recreated, the spaces are filled with mannequins with period dresses, allusive functions are celebrated.

## Harbour Bridge Climb

The most celebrated activity is the group climb through the top surface of the great metallic arch of the Harbour Bridge. It was launched in 1998 and has since been done by more than three million people. From the age of ten, all can participate and members of royalty, politicians, artists, celebrities and even a hundred-year old man sign up, as the advertising says.

One can choose four different types of climb during sunrise, day, twilight and night: the original Bridge Climb, which guides climbers to the top of the bridge, on a round trip journey of more than three hours of duration; to better explore the structure's





Ascent to the Arch of Harbour Bridge

engineering, Discovery Climb guides guests to the heart of the steel bridge and then to the top; the Express Climb allows you to shorten the ascent and, finally, the Mandarin Climb, run by a Mandarin speaking guide.

The beauty of its landscapes and the iconic appeal of the Opera and the bridge have been collected and shown in many films shot in Australia and especially in the city of Sydney and the NSW. Its diverse, picturesque and, many of them iconic landscapes, are the perfect setting for films of different genres. Preferred locations include Sydney's bay with the bridge and the Opera House, but also its islands, beaches, deserts and mountain ranges offer spectacular backdrops.

## Sydney at the Movies

Fox Studios Australia is located in Sydney, next to Moore Park, since 1998; one of the country's three major producers, alongside Village Roadshow Studios and Docklands Studios in Melbourne. Fox Studios Australia, owned by 21st Century Fox, has been involved in the production of films such as *Moulin Rouge, Star Wars: Episode I and II, The Matrix, Mission Impossible II, Superman Returns,* and many others.

The Sydney Film Festival is an annual event held for twelve days in June. It takes place in various locations in the city and includes the screening of feature films, documentaries, short films, retrospectives, animations and family films. In addition, the city of Sydney hosts two of the country's most important film events: Tropfest Australia (December 6) and the Australian Academy of Cinema and Television Arts (AECTA) awards, both supported by the Government of New South Wales. Tropfest Australia is the largest film festival in the world and takes place in Centennial Park, where it brings together the most important filmmakers and their short films. The annual AACTA Awards reward the best films, documentaries and television programs.

## Films shot in Sydney and NSW, Australia

Howling III: The Marsupials (Philippe Mora, 1987)

Australia (Baz Luhrmann, 2008)

Babe (Chris Noonan, 1995)

Dying of the Light (Paul Schrader, 2014)

Crocodile Dundee (Peter Faiman, 1986)

Wake in Fright-Outback (Ted Kotcheff, 1971)

The Great Gatsby (Baz Luhrmann, 2013)

The Man Who Sued God (Mark Joffe, 2001)

The Water Diviner (Russell Crowe, 2014)

Mechanic: Resurrection (Dennis Gansel, 2016)

Independence Day: Resurgence (Roland Emmerich, 2016)

Iron Sky (Timo Vuorensola, 2012)

Jindabyne (Ray Lawrence, 2006)

The Adventures of Priscilla, Queen of the Desert (Stephan Elliott, 1994)

Muriel's Wedding (R.J. Hogan, 1994)

Lantana (Ray Lawrence, 2011)

A Few Best Men (Stephan Elliott, 2011)

Mad Max: Fury Road (George Miller, 1979)

The Matrix (Lana Wachowski y Lilly Wachowski, 1999)

Mission Impossible II (John Woo, 2000)

Mullet (David Caesa, 2001)

Newsfront (Philip Noyce, 1978)

Not Suitable for Children (Peter Templeman, 2012)

Pacific Rim (Guillermo del Toro, 2013)

Ruben Guthrie (Brendan Cowell, 2015)

Superman Returns (Bryan Singer,2006)

The Inbetweeners 2 (Damon Beesley, Iain Morris, 2014)

The Day The Earth Stood Still (Scott Derrickson, 2008)

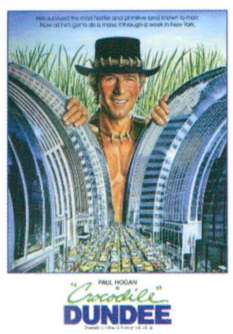
Unbroken (Angelina Jolie, 2014)

UnINDIAN (Anupam Sharma, 2015)

Daybreakers (Michael & Peter Spierig, 2009)

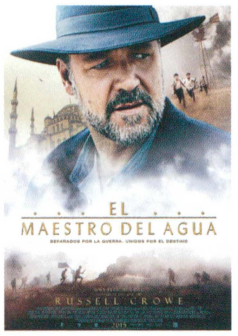
X-Men Origins: Wolverine (Gavin Hood, 2009)

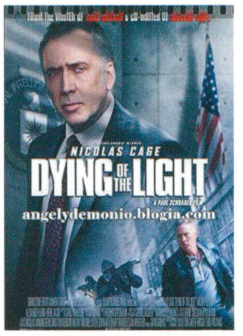
X-Men Apocalypse (Bryan Singer, 2016)







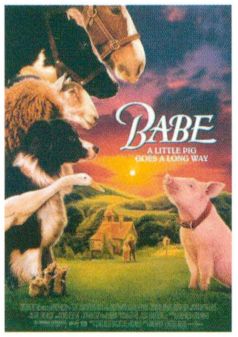


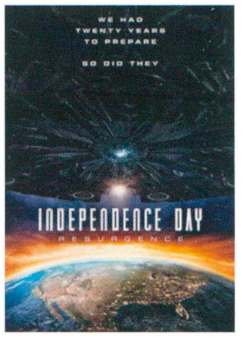



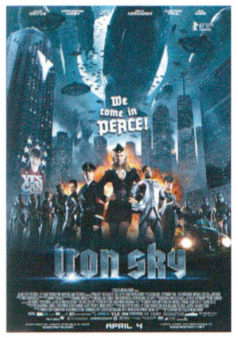


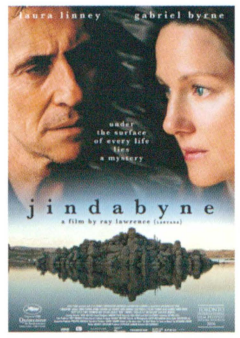


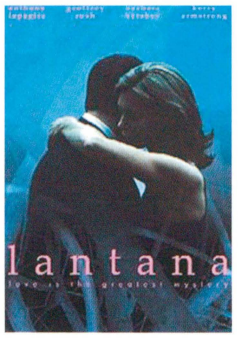


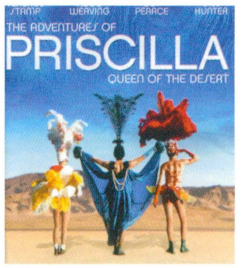



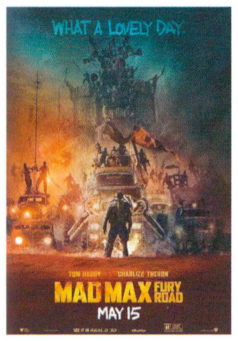



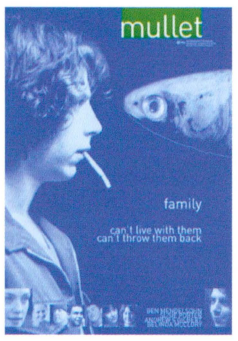



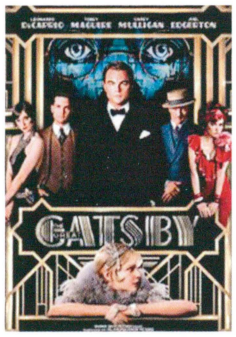



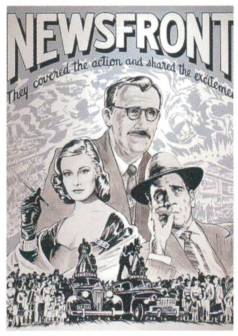


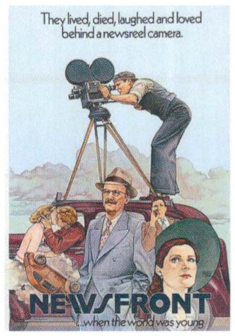


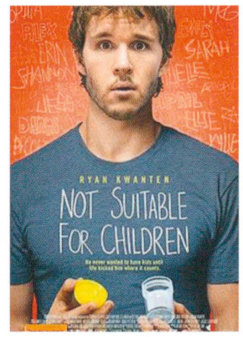


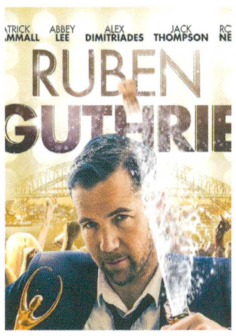


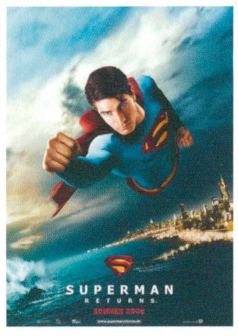


DICAPRIO MAGUIRE MULLIGAN EDGERTON
GATSBY

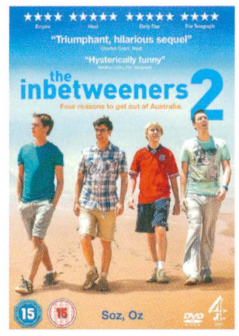

NEWSFRONT
They covered the action and shared the excitement

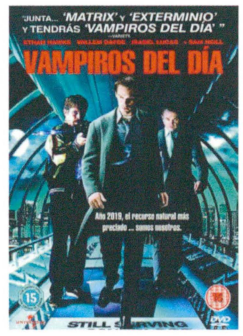

They lived, died, laughed and loved behind a newsreel camera.
NEWSFRONT
when the world was young

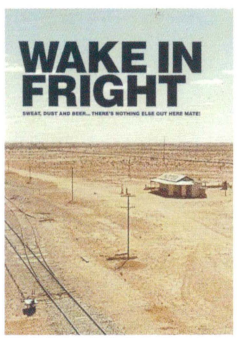

RYAN KWANTEN
NOT SUITABLE FOR CHILDREN

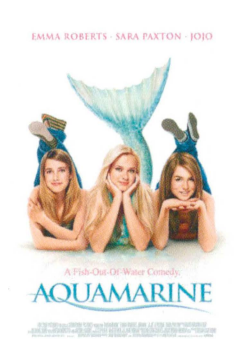

TRICK ABBEY ALEX JACK
MMALL LEE DIMITRIADES THOMPSON
RUBEN
GUTHRIE

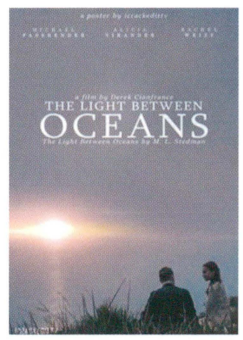

SUPERMAN
RETURNS

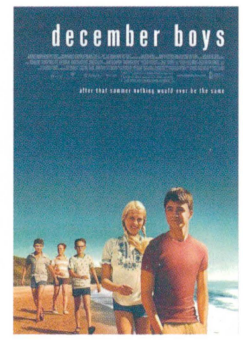

"Triumphant, hilarious sequel"
"Hysterically funny"
the inbetweeners 2
Four reasons to get out of Australia.
Soz, Oz


JUNTA... 'MATRIX' Y 'EXTERMINIO'
Y TENDRÁS 'VAMPIROS DEL DÍA'
VAMPIROS DEL DÍA

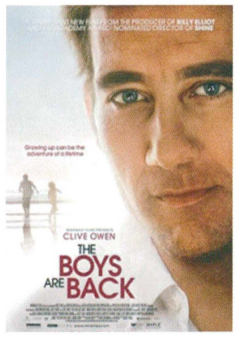

WAKE IN FRIGHT

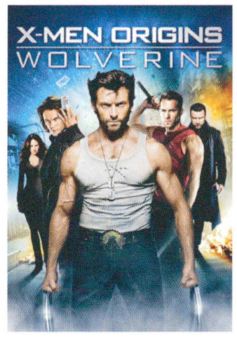

EMMA ROBERTS · SARA PAXTON · JOJO
A Fish-Out-Of-Water Comedy
AQUAMARINE


THE LIGHT BETWEEN
OCEANS


december boys


UNA
BODA
DE MUERTE


CLIVE OWEN
THE BOYS ARE BACK


X-MEN ORIGINS
WOLVERINE

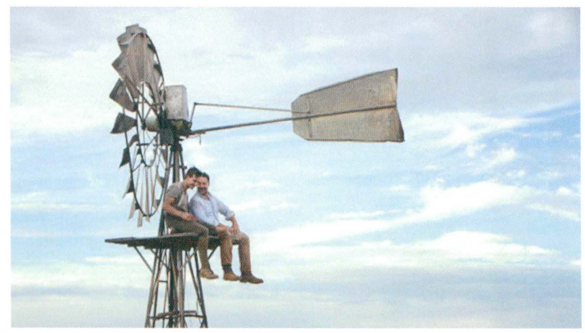

ONLY THE STRONG WILL SURVIVE
X-MEN
APOCALYPSE














▲ **Cocodrilo Dundee** (Peter Faiman, 1986)

**The Great Gatsby** (Baz Luhrmann, 2013)

**Muriel's Wedding** (R.J. Hogan, 1994)

**Australia** (Baz Luhrmann, 2008)

▲ **Independence Day: Resurgence** (Roland Emmerich, 2016)

**Wake in Fright-Outback** (Ted Kotcheff, 1971)

**The Adventures of Priscilla, Queen of the Desert** (Stephan Elliott, 1994)

**Mad Max: Fury Road** (George Miller, 1979)

▲ **Mechanic: Resurrection** (Dennis Gansel, 2016)

**Pacific Rim** (Guillermo del Toro, 2013)

**The Water Diviner** (Russell Crowe, 2014)

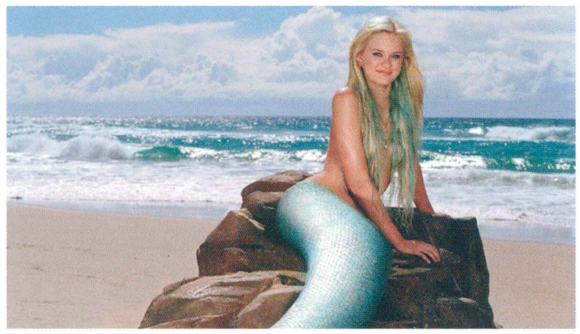
**A Few Best Men** (Stephan Elliott, 2011)














▲ **The Day the Earth Stood Still** (Scott Derrickson, 2008)
**The Matrix** (Lana Wachowski y Lilly Wachowski, 1999)
**Babe** (Chris Noonan, 1995)
**Mission Impossible II** (John Woo, 2000)

▲ **Not Suitable for Children** (Peter Templeman, 2012)
**Ruben Guthrie** (Brendan Cowell, 2015)
**The Inbetweeners 2** (Damon Beesley, Iain Morris, 2014)
**The Man Who Sued God** (Mark Joffe, 2001)

▲ **UnINDIAN** (Anupam Sharma, 2015)
**X-Men Origins: Wolverine** (Gavin Hood, 2009)
**Aquamarine** (Elizabeth Allen, 2006)
**December boys** (Rod Hardy, 2007)

## Impossible Landscapes

Much has been speculated about how such beautiful lands would have developed had the first occupants not been convicts. Even if it had not been a destination for a high population of captives, the beauty of the bay would have most certainly propelled the founding of a human settlement on its shores.

However, it would not be legitimate to imagine a better or faster subsequent trajectory if the first and later settlers had not been captive. First because it is something impossible to prove, something contrary to what happened to its first foreign settlers, unanimously seduced by the beauty of the site as their writings demonstrate. And secondly, due to the subsequent development prompted by that invasion, without detracting a single iota of its appeal for successive entries of the emigrant population across the Australian continent.

## Contrasts of Character

The country does well and, perhaps because of this, it is said that it is a land of contrasts and in Sydney, even more so. Despite the appeal of the glittering night landscape of the bay, the presence of Luna Park's fair lights is still a little squeaky, next to the severity of the northern abutment of the Harbour Bridge. In fact, all this is part of the imagery associated with the Australian character (see end of Chapter 2), probably derived from the very contrasts of Sydney's bay and its history.

As Ian Hoskins explains, *the park and the pool owed their existence to the Bridge, and the three sites together formed a curious ensemble that ran from the ridiculous to the sublime. In doing so, they encapsulated key elements of national self-identity. Luna Park epitomised the irreverence many considered quintessentially Australian, the pool was a crucible for the country's vaunted sporting prowess and physicality, and the Bridge was the fulfilment of the prophecy of progress and conquest apparently laid down by Erasmus Darwin at the commencement of colonisation* [35:225].

## A Contradictory Imaginary

This prophecy brings us back to the wonderful, ample, contradictory, and peculiar Australian imaginary: the repertoire of symbolic and conceptual elements of that country and society is not simple, nor is it easy to approach. But it is imperative to take it into account if you want to understand the city of Sydney at all, without falling into the multiple stereotypes generated by its remoteness and its ancient inhabitants and the peculiar process of its later occupation. A proper treatment of this issue would take another book but, as a summary of the urgency in pointing out the basic tensions on which the city has been built, consider the elaborate syllabus of a New York University course, entitled: *Introduction to Australian Society: the Australian Imaginary.*

A brief summary of the syllabus indicates that Australians like to see their nation in various ways, such as: *the lucky country,* but with a debt to pay for the plunder of the land to the aborigines; the land of fair treatment, which cruelly deters refugees; a place with a satirical sense of humor, along with a remarkably sentimental worldview; a multicultural nation, with a history of *white Australian politics;* a place proud of its traditions of equality and companionship, with rules about who is allowed to enter *the club;* a place with distinctive local traditions, which takes many of its cues from world culture; a place with a history of anti-British and anti-American sentiment that has also had strong political affinities and military pacts with Britain and the USA; a



Opera House and Harbour Bridge from the Botanic Gardens

place of a relaxed and quiet attitude, with a high degree of governmental control of individual freedoms; a highly urbanized population that dreams of the mountain and the interior as the incarnation of the real Australia; and a place with a history of progressive social policy and democratic tradition, which has never experienced a revolution.[75]

## Sydney in Australia

In his already mentioned book *The Australian Ugliness* [7], Robin Boyd points out the role of the city of Sydney in the vast Australian continent. Although the nearly 70 years since then have been a great boost to the homogenization of people and countries according to guidelines marked by global media, the book maintains its vigor and is especially attractive when referring to Sydney.

For Boyd, Sydney embodies the Australian. It is the oldest and largest city and is proud of that. It has the tallest buildings, the brightest lights, the best and closest beaches with the strongest rescuers, the fiercest colors in the fastest taxis with the most demanding drivers, the brightest banks in parks everywhere, the greatest traffic activity. Sydney has the only nightlife facilities worth mentioning, the highest level in popular entertainment, the most intelligent and pretentious element of the Australian pattern.


SUNCORP
CREDIT SUISSE



Opera House from Harbour Bridge Tower

Its three main contributions to the visible background of Australian life are its colonial architecture, its Harbour Bridge and its contemporary hotel bars. The first of these –the good vernacular plain and the sensitive and cultivated late Georgian buildings– has been destroyed so diligently as to free us from considering this point.

The second, inaugurated in 1932, remains the world's largest steel arch bridge and the most spectacular man-made isolated object on earth. It is the image of Australia adopted by airline advertisers and by Hollywood to establish the 'locality' of Australia in just three seconds...

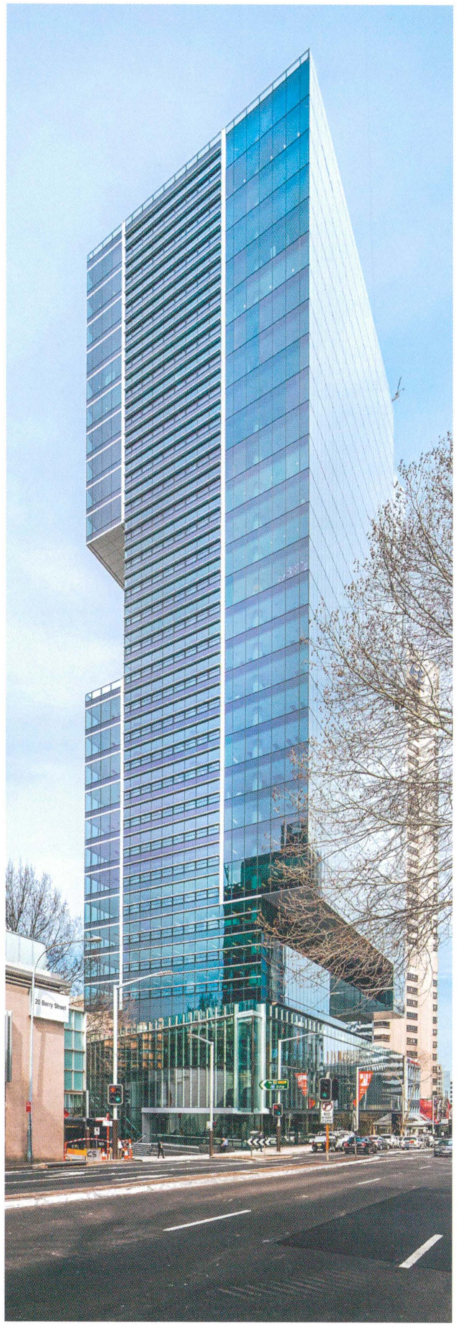
Sydney's third major contribution, the contemporary bar *lounges,* are a product of only the last two or three years of the 1950s and their influence on the rest of the country has yet to have a full effect. In these constructions Sydney achieves a lively architectural expression for the first time in the 20th century for Australia's phenomenal consumption of beer and its gregariousness [7:35].

Perhaps the construction of the Opera House, which is after Boyd's 1960 book, would have displaced some of these three contributions, given its enormous projection. And perhaps the consumption of beer has not been surpassed by that of wine, but the dominant image in the full and splendorous *lounges* of the city at dusk is that omnipresent gregariousness signaled by Boyd, standing up and with a glass of wine in the hand. And it's still overwhelmingly true that Sydney is a city proud to be how magnificent it really is, and it seems that it wants to remain so.

Opera House and CBD from Taronga Zoo



# 6 | Works



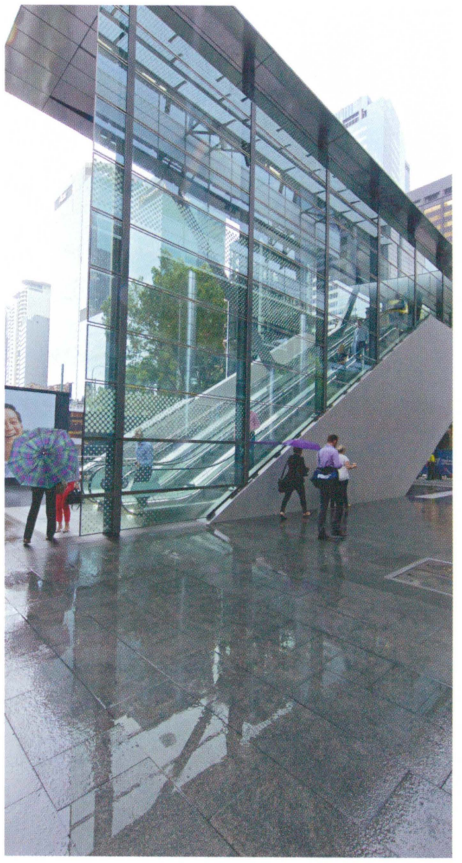
Pacific Highway



Epping to Chatswood Rail Line




Royal North Shore Hospital Infrashore



Wynyard Walk Opening



Epping to Chatswood Rail Line



EasternDis



Homebush



Epping to Chatswood Rail Line




KENS



Westlink



EasternDis




North West Rail Link



Westlink



Epping to Chatswood Rail Line 14



Widening. 2016



Widening



Pacific Highway Corner Facade-James's Mac Pro




Royal North Shore Hospital Infrashore



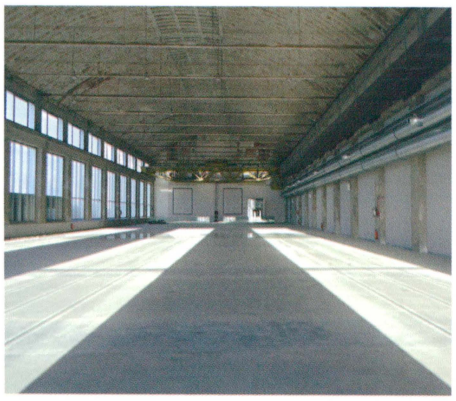
Viaduct Linares-Ibros, Jaén. 2015



Viaduct over the Ulla river, Pontevedra. 2015



Firth of Forth, Scotland, United Kingdom. 2016



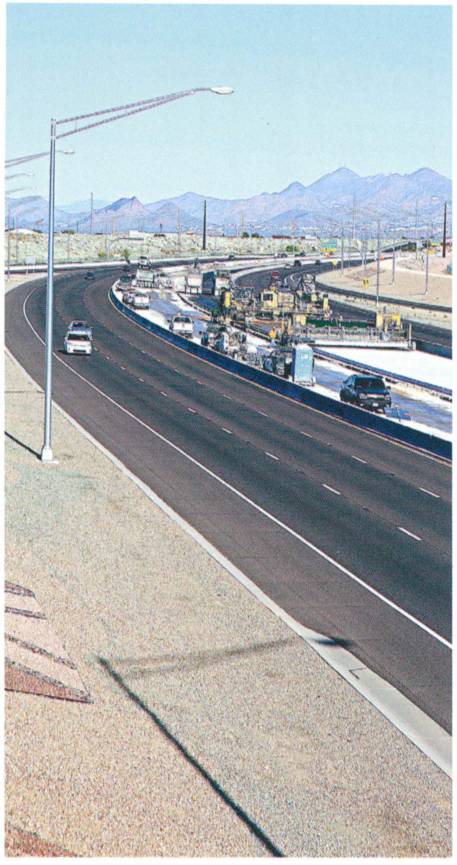
Headquarters of the Museum of Energy, León. 2015



Firth of Forth, Scotland, United Kingdom. 2016



Pinar de Antequera housing complex, Valladolid. 2015



SR 202L Freeway, Pulice, EEUU. 2015



Firth of Forth, Scotland, United Kingdom. 2016



Tunel de Seattle, EEUU. 2016



Regional connector 6th street Pulice, USA. 2015



Pinar de Antequera housing complex, Valladolid. 2015



Regional connector 2nd street, Pulice, USA 2015



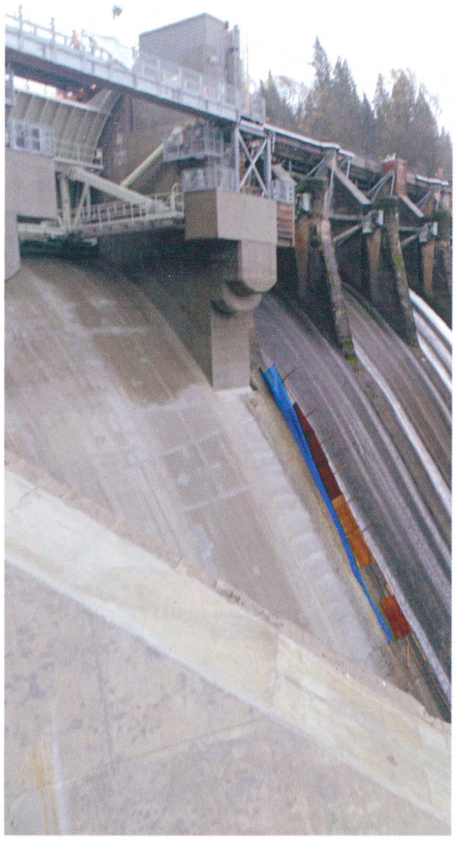
Yesa Dam, Navarra. 2016



SR 202L Freeway, Pulice, EEUU. 2015



Seattle Tunnel, USA. 2016



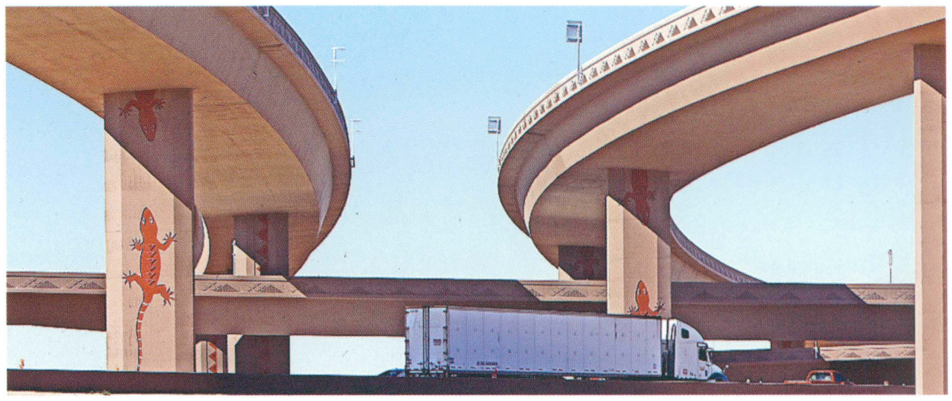
Ruskin Dam, Vancouver, Canada. 2015



Pelli Tower, Sevilla, 2014



Broadway Sewer Pulice, USA. 2015



SR 303L I-10 Pulice, USA. 2015



Tazacorte Harbor, La Palma, Canary Islands. 2015



Regional connector 2nd street, Pulice, USA. 2015



San Vicente Reservoir Marina, Pulice, USA. 2015



Palace of Exhibitions and Congresses, León. 2014



Pelli Tower, Seville, 2014



Headquarters Museum of Energy, León. 2015



Albagés Dam, Lleida. 2016



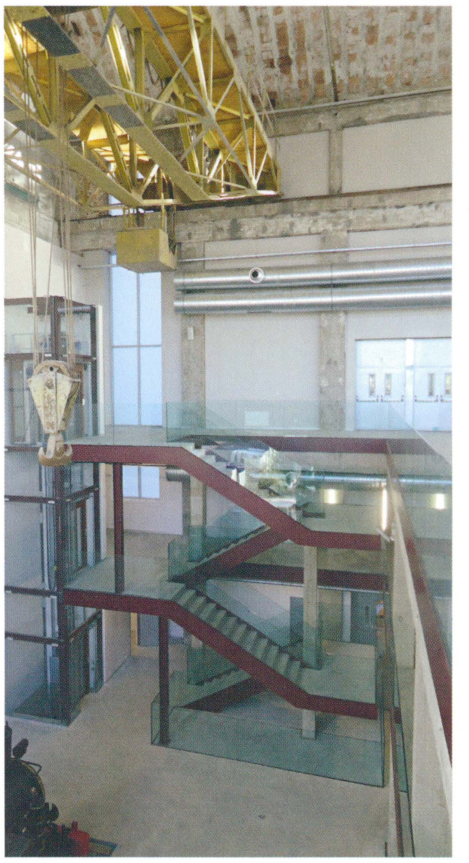
Ruskin Dam, Vancouver, Canada. 2015



Regional connector 6th street, Pulice, USA. 2015



SR 303L I-10 Pulice, USA. 2015



Headquarters Museum of Energy, León. 2015



New headquarters of Banco Popular, Madrid. 2016



Windsor Essex Parkway, Ontario, Canada. 2015



Irrigation modernization Bierzo, León. 2015



Lima Subway Line 1 Peru. 2016



Ruskin Dam, Vancouver, Canada. 2015.



Firth of Forth. Scotland, United Kingdom. 2016



Etap Garden Center, Madrid. 2016



Banks of the Sil river, Ponferrada, León. 2016



Viaduct over the Ulla river, Pontevedra. 2015



Management of road infrastructures, Ribera Loira, Madrid. 2015



Dredging of Chilota Bay, Chile. 2014



Dredging of Chilota Bay, Chile. 2014



Broadway Sewer Pulice, USA. 2015



Etap Garden Center, Madrid. 2016



Dual Carriageway Bogotá-Villavicencio, Colombia. 2015



Crossrail. London, United Kingdom. 2016



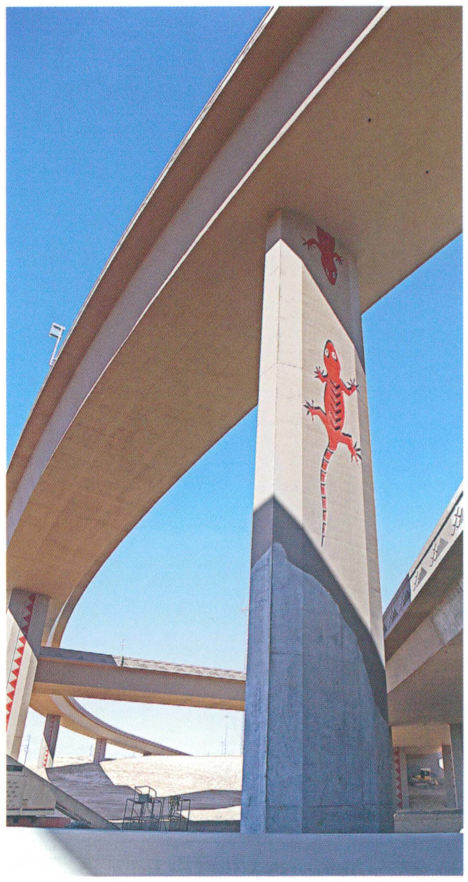
San Vicente Reservoir Marina, USA, EEUU



Niño Jesús School, Burgos. 2015



Dual Carriageway Bogotá-Villavicencio, Colombia. 2016



SR 303L I-10 Pulice, USA. 2015



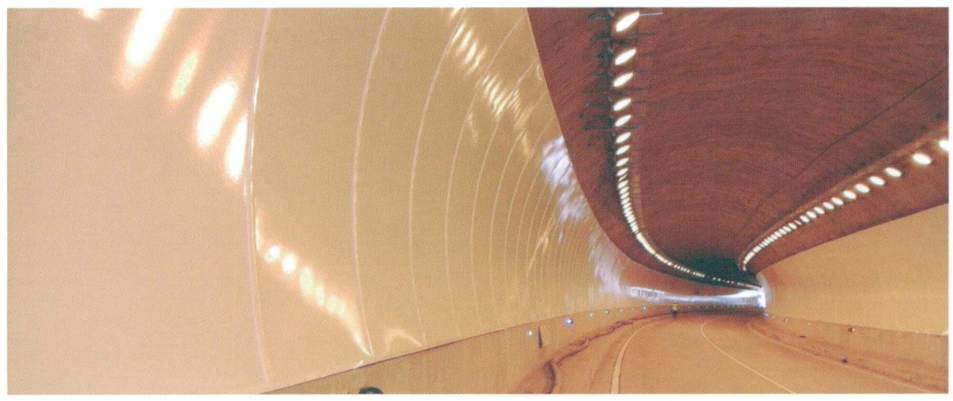
Yesa Dam, Navarra. 2016



Calaveras Dam, USA. 2016



Highway I-75 Macon, Georgia Pulice, USA. 2015



Dual Carriageway Bogotá-Villavicencio, Colombia. 2016



Management of road infrastructures. Walkway Dehesa Villa, Madrid. 2015




Crossrail. London, United Kingdom. 2016



Dual Carriageway Bogotá-Villavicencio, Colombia. 2016




Dual Carriageway Bogotá-Villavicencio, Colombia. 2015



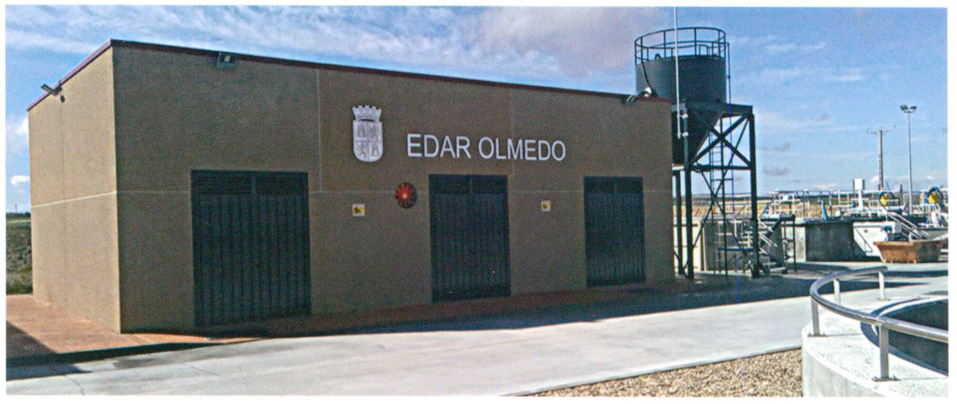
Highway I-75 Macon, Georgia Pulice, USA. 2015



Vizcachas Ponds, Chile. 2014



New headquarters Banco Popular, Madrid. 2016




Edar de Olmedo, Valladolid. 2015



Metro Lima Línea 1 Peru. 2016



Water treatment plant, Olmedo, Valladolid. 2015



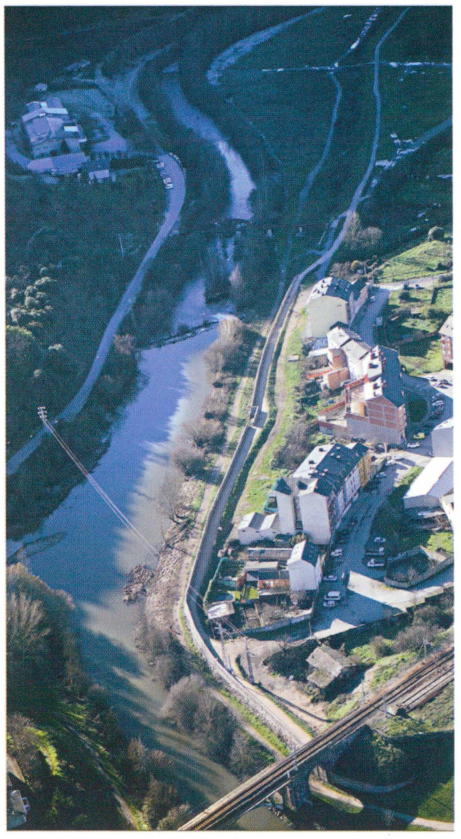
Yesa Dam, Navarra. 2016




Crossrail, London, United Kingdom. 2016




Niño Jesús School, Burgos. 2015



Banks of the Sil river. Ponferrada, León. 2016



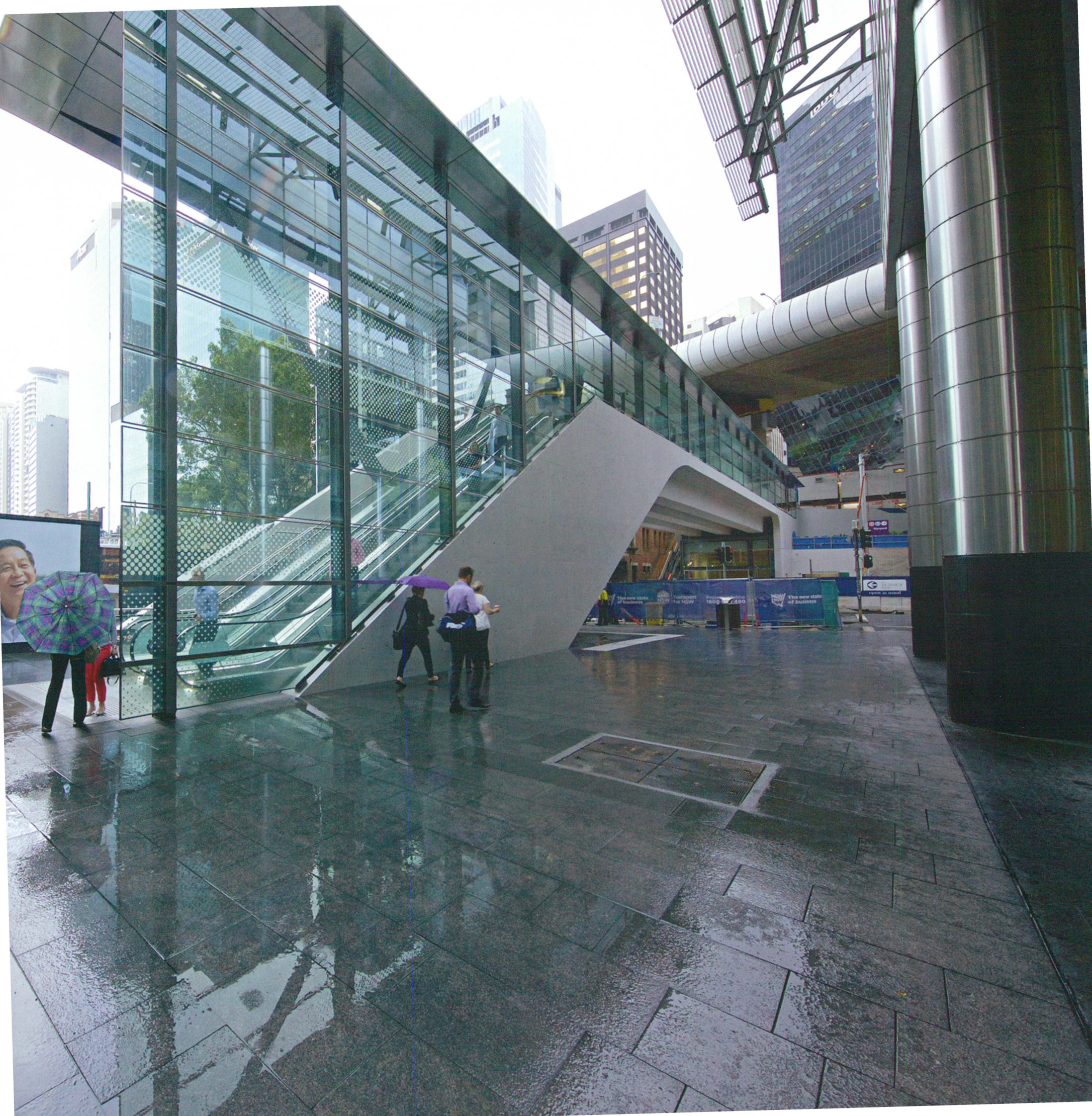
Management of road infrastructures. Link A6 M30, Madrid. 2015



Broadway Sewer Pulice, USA. 2015



Dual Carriageway Bogotá-Villavicencio, Colombia. 2016


The new state of business
Transport for NSW
The new state of business
SYDNEY
open as usual

# 7 | References, Indexes, Notes

## Bibliographic references


[1] Aguiló, Miguel; 2002. La enjundia de las presas españolas. ACS, Madrid.

[2] Aguiló, Miguel; 2014. Building Modern New York. ACS, Madrid.

[3] Ashton, Paul; 1993. The Accidental City: Planning Sydney Since 1788 . Marrickville: Hale and Iremonger.

[4] Bergson, Henri; 1939. Materia y memoria. Ensayo sobre la relación del cuerpo con el espíritu. Cactus, Buenos Aires, 2006.

[5] Birch, Gavin F., Orla Murray, Ian Johnson, and Andrew Wilson; 2009. Reclamation in Sydney Estuary, 1788-2002. Australian Geographer 40, no. 3 (2009): 347–368.

[6] Bogle, Michael; 1999. Convicts: Transportation & Australia. Historic Houses Trust, New South Wales. Sydney, 2008 (revised ed.).

[7] Boyd, Robin; 1960. The Australian Ugliness. Text Publishing, Melbourne, 2015.

[8] Bradfield, J J C; 1916. Report on the Proposed Electric Railways for the City of Sydney. Ministry of Works, NSW, Sydney.

[9] Carey, Peter; 2001. 30 Days in Sydney. Bloomsbury Pu- blishing, London, 2015 (1st ed. 2001).

[10] Chatwin, Bruce; 1987. The Songlines. = Los trazos de la canción. Ediciones Península, Barcelona, 2015.

[11] Conrad, Joseph; 1906. Mirror of the Sea. A Personal Record. J. Grant, London, 1925.

[12] Couper, Rachel; 2016. A Century of Zoo Design. Architecture Bulletin: Parks, Pools & Recreation. NSW: Australian Institute of Architecture, summer 2016.

[13] Cowan, Henry J.; City Buildings. In: Fraser, Don (ed.); 1989. Sydney from Settlement to City. An Engineering History of Sydney. Engineers Australia Pty Limited, Sydney: 215-241.

[14] Dardel, Eric; 1952. El Hombre y la Tierra. Biblioteca Nueva, Madrid, 2013.

[15] Deane, H.; 1900. Economical Railway Construction in New South Wales. Proc. Institution of Civil Engineers, vol. 142, pp 78-88.

[16] Debras, Berenice; Kerorguen, Yan de; 2015. Sydney, Big Business on the Beach. The Good Life, 18 (avril-may-juin, 2015): 139-155.

[17] Deleuze, Gilles; 1969. Lógica del sentido. Paidós, Barcelona, 2005.

[18] Dellora, Daryl; 2013. Utzon and the Sydney Opera House. Penguin Specials, Melbourne.

[19] FitzSimons, Peter; 2013. The Old Hume Highway – History begins with a road. NSW Government. Transport. Roads and Maritime Services, Sydney.

[20] Flood, Joe; 2003. Urban Slums Reports: The Case of Sydney, Australia. Understanding Slums: Case Studies for the Global Report on Human Settlements. http://www.ucl.ac.uk/dpu-projects/Global_Report/pdfs/Sydney.pdf

[21] Ford, Caroline; 2014. Shaping the beach: coastal politics, community values and the creation of public coastal spaces in Sydney. 23rd NSW Coastal Conference. http://www.coastalconference.com/2014/papers2014/Caroline%20Ford%20Full%20Paper.pdf

[22] Fraser, D. J.; 1985. Early Reinforced Concrete in New South Wales (1895-1915). Multidisciplinary Engineering Transactions, Vol GE9, num. 2, (October 1985). The Institution of Engineers, Australia.

[23] Fraser, Don (ed.); 1989. Sydney from Settlement to City. An Engineering History of Sydney. Engineers Australia Pty Limited, Sydney.

[24] Fraser, Don; 2009. American Bridges in New South Wales 1870-1932. 3rd Australasian Engineering Heritage Conference, 2009.

[25] Freestone, Robert; 2004. The Americanization of Australian Planning. Journal of Planning History, Vol. 3 No. 3, (August 2004): 187-214.

[26] Fromonot, Françoise; Thompson, Christopher; 2000. Sydney: History of Landscape. Vilo International, Paris.

[27] Australian Government; 1966. Australian Profile. Department of Commerce and Industry.

[28] Godden Mackay Logan; 2004. Taronga Zoo, Archaeological Management Plan. Sydney: Zoological Parks Board of NSW.

[29] Hawken, Scott; 2016. Coastal Leisure. Architecture Bulletin: Parks, Pools & Recreation. NSW: Australian Institute of Architecture, summer 2016.

[30] Hedric-Wong, Yuwa; Desmond, Choong; 2015. Tra- cking Global Growth: 2009-2015. MasterCard, 2015. Global Destination Cities Index

[31] Heidegger, Martin; 1951. Construir, habitar, pensar. In: Conferencias y artículos. Serbal, Barcelona, 1994.

[32] Hertmans, Stefan; 2001. Intercities. Reaktion Books, London.

[33] Holliday, Amelia; Toland, Isabelle; Tabet; Michelle (ed.); 2016. The Pool: Architecture, Culture and Iden- tity in Australia. Australian Institute of Architects.

[34] Holm, Michael J.; Kjeldsen, Kjeld; Marcus, Mette; 2004. Jorn Utzon : the Architect's Universe. Louisiana Museum of Modern Art, Louisiana.

[35] Hoskins, Ian; 2009. Sydney Harbour. A History. UNSW Press, Sydney.

[36] Hughes, Robert; 1987. The Fatal Shore. The Epic of Australia's Funding. Knopf, New York.

[37] Institution of Engineers Australia, Sydney division; 1993. The Sydney Water Supply Complex at Prospect. A submission for three Historic Engineering Markers. Sydney.

[38] Jack, Russell C.; 1980. The Work of the NSW Government Architect's Branch- 1958-1973 M. Arch. Degree Thesis. Faculty of Architecture, The University of New South Wales.

[39] Karsens, Grace; 1995. The Rocks and Sydney: Society, Culture and Material Life, 1788-1830. University of Sydney.

[40] Keswick, Maggie; 1978. The Chinese Garden. Harvard University Press, 2003.

[41] King, Susan M.; 2013. Reading the City, Walking the Book: Mapping Sydney's Fictional Topographies. Thesis submitted to the Faculty of Arts and Social Sciences, University of Sydney.

[42] Ludlow, C.;1991. Proposal to Landmark the Pyrmont Bridge Darling Harbour as a National Engineering Landmark. Engineering Heritage Committee, Sydney Division, I.E. Australia, 1991.

[43] Marsden, Susan; 2000. Urban Heritage: the rise and postwar development of Australia's capital city centers. Australian Council of National Trusts and the Australian Heritage Commission, Canberra. www.environment.gov.au/heritage/

[44] Mayne-Wilson & Associates; 2001. Draft Heritage Study and Review of Proposed Landscape Master Plan of the McElhone Reserve. The Council, South Sydney, NSW.

[45] Moy, Michael; 2006. Sydney Harbour Bridge, Idea to Icon. Alpha Orion Press, Sydney, 2012.

[46] Nieto, Fuensanta; Sobejano, Enrique; (coord.); 1995. Jorn Utzon. Ministerio de Obras Públicas, Transportes y Medio Ambiente, Madrid.

[47] Pickett, Charles (curator); 2016. Imagine a City. 200 Years of Public Architecture in NSW. A Free Exhibition at the State Library of NSW (20 Feb -8 May 2016), Sydney.

[48] Piracha, Awais. 2014. "Water Views, Affluence and Concern for Sustainable Transport: The Case of Sydney, Australia." Edited by A. Brandeis. Procee- dings of the 50th Isocarp Congress: Urban Trans- formations: Cities and Water, 1297–1312. https:// www.zotero.org/groups/470366/items/itemKey/ CMJ29WX8/itemPage/2#

[49] Prasad, Peter; 2014. Menangle Bridge. Maintaining an Aged Structure into the Future. Astroads (oct 2014).

[50] Preston, Jennifer; Stead, Naomi; 2013. Edward Bell and the Interdisciplinarity of Engineering and Architecture in Victorian Sydney, Fabrications, 23, 2:182-207. http://dx.doi.org/10.1080/10331867.2013.860673

[51] Remi, Georges (Hergé); 1968. Vol 714 pour Sydney. Collection Les aventures du Tintin et Milou, n. 22. Casterman, Paris - Turmai.

[52] Rey Rey, Juan Ignacio (2013). Aplicación de algoritmos paramétricos de generación formal en el diseño estructural. La Ópera de Sidney desde una perspectiva contemporánea. En: 2nd International Congress on Mechanical Models in Structural Engineering, 20/06/2013 - 21/06/2013, Granada: 53-61.

[53] Rey Rey, Juan; 2013. La barrera del análisis estructural y la representación gráfica en el desarrollo de los proyectos arquitectónicos: el caso de la Ópera de Sidney. Tesis Doctoral, ETSAM, UPM.

[54] Rice, Peter; 1998. Mémoires d'un ingénieur. Le Moniteur, Paris.

[55] Roberts, Paul; Taylor, Isabelle; 2013. Racecourse Architecture: Royal Randwick. New York: Acanthus Press.

[56] Sudjic, Deyan; 2006. The Edifice Complex: How the Rich and Powerful Shape the World. Penguin, London.

[57] Tabet, Michel; 20arc16. A Life Aquatic. Architecture Bulletin: Parks, Pools & Recreation. NSW: Australian Institute of Architecture, summer 2016.

[58] Thalis, Phillip; Cantrill, Peter John; 2013. Public Sydney. Drawing the City. Faculty of Built Environment, University of New South Wales, Sydney.

[59] The Sydney Morning Herald; 1982. The Sydney Harbour Bridge. A History spanning 50 years. John Fairfax & Sons Ltd, Sydney.

[60] Thorpe, Noel; 1989. Water Supply and Sewerage. In: Fraser, Don (ed.); 1989. From Settlement to City. An Engineering History of Sydney. Engineers Australia Pty Limited, Sydney.

[61] Tuffin, R. L.; 2016. Australia's Industrious Convicts: an archaeological study of landscapes of convict labour. Thesis for the degree of Doctor of Philosophy, Department of Archaeology, University of Sydney.

[62] Tuffin, Richard; 2013. Australia's Industrious Convicts: A reappraisal of archaeological approaches to convicts labour. Australian Archaeology, 76 (June 2013):1-10.

[63] Twain, Mark; 1895. The Wayward Tourist. Melbourne University Press, 2006.

[64] Waldheim, Charles; 2016. Landscape as Urbanism. A General Theory. Princeton University Press. Princeton and Oxford.

[65] Walker, Derek; 1987. The Great Engineers: the Art of British Engineers,1837-1987. Academy Editions : St. Martin's Press, London.

# Thematic Index


**A**

Aqueducts:
  Cooks River, 139
  Johnston's Creek, 138
  Wolli Creek, 139
  Boothtown, 137
Adelaida, 85
Africa, 23
Albers, Josef, 258
Allan, Percy, 87, 89, 90, 289
America, 14, 23, 26, 42, 163, 169, 170, 217, 256, 372
Ancher, Mortlock & Partners, 264
Anderson, William, 244
Antarctica, 23
Anzac Memorial, 163, 190
Anzac Parade, 184
Aranbaroo, 40
Archibald Fountain, 189, 193
Arias Memorial, 29
Art Gallery of NSW, 100
Arup, Ove N., 264, 293, 297
Ashton, Paul, 46
Asia, 23, 29, 273, 274
Athol Bay, 322
Atlantic, 31
Auckland, 23
Australia, 21, 23, 26, 27, 28, 31, 34, 39, 41, 42, 45, 52, 56, 58, 71, 72, 87, 89, 96, 127, 128, 137, 140, 151, 154, 157, 158, 166, 167, 168, 169, 170, 191, 196, 200, 212, 215, 224, 232, 241, 242, 250, 255, 256, 257, 261, 262, 264, 266, 273, 275, 278, 279, 284, 287, 298, 300, 301, 312, 316, 319, 332, 335, 343, 344, 346, 348, 349, 351, 366, 372
Ayers Rock, 24, 25
Azores, 25

**B**

Backhouse, Benjamin, 196
Bacon, Ed, 170
Bagot, Woods, 161
Balzer, W., 138
Bangkok, 23
Banks, Joseph, 28, 33
Bankstown, 182, 255, 312
Bankstown Airport, 255, 312
Bantry Bay, 20
Barangaroo, 40, 85, 255, 273, 274
Barlow, John B., 174 Barnes, Terry, 170
Barnet, James, 64, 77, 96, 98, 99, 100, 127, 226
Barney, George, 95
Batavia, 28
Bates, Smart & McCutcheon, 231 Bathurst, 72, 87, 264
Beaches:
  Bondi Aquarium, 244
  Bondi Beach, 77, 144, 151, 154, 235, 317, 338
  Bondi Pavilion, 77, 149
  Bondi Promenade, 151
  Bondi Surf Bathers Life Saving Club, 144
  Bronte Beach, 158, 317, 318
  Clovelly Beach, 317

Coogee, 157, 158, 163, 235, 244, 317
Coogee Palace Aquarium, 244
Coogee Pavilion, 244
Eastern Beaches Coastal Walk, 317
Freshwater, 250
Manly, 20, 41, 138, 163, 250, 253, 318, 346
Maroubra, 184
Tamarama Beach, 317
Beijing, 23
Bennelong, 40, 41, 137, 228, 273, 274, 292
Bennelong Point, 137 Bennet, W. C., 120
Bergson, Henri, 300
Berlin, 176, 301
Berrima, 54, 56, 57, 77, 113, 114, 116
Berzins, Litvian I., 71, 191
Bigge, John, 47
Biggs, Esther, 157 Black Bobs Creek, 114
Blacket, Edmund, 100
Blackwattle Bay, 85, 119, 123, 237
Blackwattle Swamp, 137
Blaxland, Gregory, 72
Blue Mountains, 17, 39, 71, 72, 73, 346
Bogle, Michael, 42, 366 Bond, James and Laron, 264
Botany Bay, 17, 20, 21, 27, 28, 33, 57, 95, 138, 184, 196, 209, 242, 255, 285, 311, 333, 346, 372
Botany Bay System, 17, 57, 133, 134
Botany Swamps, 132, 133
Bowral, 116
Boyd, Robin, 34, 212, 349
Bradfield Head, 20
Bradfield, John C., 20, 127, 163, 182, 183, 187, 210, 212, 215, 216, 217, 218, 221, 237, 328, 366
Bradfields Head, 240
Brasil, 27
Bridges:
Anzac Bridge, 123, 255, 275, 287, 289
Shea's Creek bascule bridge, 123
Berrima Bridge, 113, 114, 116
Blackwattle Bay sliding bridge, 123
Britannia Bridge, 120
Como Bridge, 121, 125
Corroboree Bridge, 220
double-leaf bascule bridge of Spit, 123
Gasworks Bridge, 121
Glebe Island rotating bridge, 123, 289
Glebe Railway Bridge, 163, 238
Gladesville Bridge, 39, 125, 255, 285, 287
Harbour Bridge, I, 14, 20, 39, 127, 163, 171, 174, 176, 179, 182, 183, 210, 212, 215, 216, 217, 219, 221, 227, 232, 233, 235, 237, 240, 242, 255, 262, 263, 266, 274, 275, 283, 297, 299, 300, 328, 332, 334, 335, 338, 339, 341, 342, 343, 346, 348, 351, 366
Hawarden, 89
Iron Cove Bridge, 77, 124, 125
Lansdowne Bridge, 113
Lennox Bridge, 39, 141 London Tower Bridge, 89 Manchester Ship Canal, 89
Meadowbank Bridges, 77, 121, 125
Menangle Bridge, 77, 120, 121, 357
Newcastle on Tyne, 89
Northbridge suspension bridge, 123, 124
Pyrmont Bridge, 77, 85, 88, 89, 123, 273, 275, 366
Three Legs O'Man Bridge, 113
Pyrmont Bay, 77, 85, 88, 89, 123, 184, 198, 235, 273, 275, 289, 366
Brunel, Isambard K., 210 Budden & Mackey, 187
Buenos Aires, 23, 25, 39, 366
Buildings:
AMP Centre, 163, 227, 264, 266
ANZ Bank, 264
Art Gallery of NSW, 64, 77, 96, 100, 102, 103, 284
Australia Hotel, 262
Australia Square, 255, 257, 261, 264, 266
Australian Museum, 50, 62, 195
AWA Tower, 256 Berrima Court House, 56 Berrima Gaol, 54, 56, 57 Berrima Post Office, 116
Berrima Public School, 116 Berrima Training Centre, 57
Blues Point Tower, 255, 257, 261, 262
Brislington House, 37
British Medical Association House, 229
Centennial Hall, 100
Central Square, 264
Citra House, 264
Cleveland House, 196
Colonial Inn, 116
Colonial Mutual, 77, 100, 264
Commercial Union, 264
Commissariat Store, 163, 224
Civil & Civic, 264
Clarke, George, 170
Colebee, 40
Condit, Carl, 217
Conrad, Joseph, 33
Cook, James, 20, 27
Cook, James, 18, 196
Cookle Bay, 275
Cookney, George, 71
Cooks River, 134
Cooks River Sewage Aqueduct, 77, 138, 139
Copenhagen, 23
Coyle, J. E. F., 124
Cremorne Point, 240, 241
Commonwealth Centre, 264, 276
Conservatorium of Music, 64
Court Houses, 54
Curulla Towers, 256
Customs House, 163, 226
Darlinghurst Gaol, 17, 54, 332
Downing Centre, 62
Edgewater, 198
Elizabeth Bay Road, 198
Elizabeth Bay House, 68, 71
Exchange Centre, 264
Fort Denison, 319
General Post Office, 77, 99, 100, 256
Goodsell Building, 264
Government House, 37, 64, 71
Grace Hotel, 198
Grosvenor Place, 264
Harbour Control Tower, 255, 270, 271
Harper's Mansion, 116
Hilton Hotel, 264
Horizon Apartments, 255, 262
Hyde Park Tower, 264
IBM, 264
International College of Tourism and Hotel Management, 319
Kyle House, 52
Lachlan Macquarie Chambers, 37
Lands Department, 50, 77, 98, 99, 132, 133, 256
Mitchell Library, 96
MLC Centre, 255, 262, 263, 264
Museum of Contemporary Art, 163, 224, 225
Mutual Life & Citizens, 163, 231
National Maritime Museum, 28, 255, 274, 275, 276
New Brighton Hotel, 253
No 1 Chandos St, 264
NSWIT Building, 264
Palm House, 64
Park Regis, 264
Parramatta Book Store, 198
Parramatta Railway Station, 119
Parramatta Towers, 255, 276
Pyrmont Incinerator, 198
Qantas Int'l Centre, 264
Quarantine Station, 318, 322
Queen Victoria Building, 77, 100, 104
Rathborne Lodge, 64
Rose Seidler House, 255, 258, 259
Rum Hospital, 17, 47, 50, 229
Sirius, 27, 36, 255, 263, 270, 372
St Andrew Cathedral, 77, 100
St Johns Church, 37
St. Mary's Cathedral, 50, 52, 193
State Library of NSW, 50, 64, 102, 103, 161, 284, 366
State Office Block, 264
Steyne Hotel, 253
Surveyor General Inn, 116
Sydney Grammar School, 62
Sydney Harbour YHA, 163, 220
Sydney Hospital, 62
Sydney Tower, 85, 255, 266, 289
The Mint, 50, 53
Town Hall, 77, 100, 102, 171, 256, 264
Vaucluse House, 17, 71, 73
Victoria Barracks, 60, 77, 93, 95
Water Board, 201, 206, 264
Winston Buildings, 198
Wisteria House, 71
Wychbury, 5 Manning St, 198
Burns, James, 72
Busby, John, 57

C

Cahill Expressway, 255, 283, 284
Calder, Alexander, 261
Camden, 111
Campbelltown, 182
Camperdown, 62
Canberra, 26, 111, 196, 212
Candela, Félix, 293
Cantrill, Peter John, 187, 193, 273, 366
Cape Verde, 31, 39
Cape Town, 23, 31
Carey, Peter, 42, 154, 235
Carlberg, Norman, 261
Carter, Shaun, 270
Central Station, 77, 122, 126, 127, 172, 175, 178, 179, 183, 184, 185, 196
Chatwin, Bruce, 41, 164, 166, 167, 366
Chile, 29, 39
Choong, Oi, 195
Circular Quay, 14, 33, 60, 64, 77, 90, 163, 174, 175, 176, 177, 183, 184, 221, 224, 225, 227, 228, 235, 264, 275, 283, 290, 297, 299, 300, 301, 303, 322
City Circle, 171, 178, 179, 187, 189
City Railway, 171, 183
Crone, Donald, 255, 266
Cronulla, 209
Crowe, Russell, 309
Curtin, John, 278

D

Dalrymple, Alexander, 29
Dams:
Avon Dam, 163, 205
Cataract Dam, 163, 201, 203
Cordeaux Dam, 163, 203, 204
Nepean Dam, 163, 206
Parramatta Dam, 77, 140, 141
Prospect Dam, 77, 134, 136, 137, 200
Town Pond Dam, 141
Warragamba Dam, 134, 163, 200, 203, 206, 208, 209
Woronora Dam, 163, 200, 201, 203, 206
Dardel, Enric, 154
Daringha, 40
Darley, C. W., 140
Darling Harbour, 77, 85, 119, 127, 137, 139, 172, 177, 178, 179, 184, 235, 239, 242, 255, 270, 271, 273, 274, 275, 276, 289, 366
Darwin, Charles, 34, 39
Dawes Point, 119, 163, 210, 235, 237
de Groot, Francis Edward, 333
Deane, Henry, 87
Dellit, Charles B., 190
Deposit of Crown Street, 17, 57, 134, 200
Docker and Smith, 264
Dolphin Point, 158
Durack, Fanny, 158
Dusseldorp, Gerardus, 261

E

East Indies, 28
Egypt, 42, 163, 203
Elizabeth Bay, 54, 198
Europe, 14, 23, 26, 28, 134, 138, 191, 257
Evans, George, 72

F

Falklands, 39
Farm Cove, 52, 64
Farrely, Elizabeth, 270
Fernández, Juan, 29

Fitzgerald, John, 174, 175
Fitzpatrick & Partners, 161
Fombertaux, 264
Ford, Caroline, 144
Foveaux, Joseph, 224
Fowell & McConnell, 229
Fowler, John, 121, 210
Fox & Associates, 264
France, 27, 137, 189
Fraser, Don, 119
Fraser, Rod, 169
Frazer, John, 60
Freeman, Ralph, 215
Freestone, Robert, 278, 281

G

G Maunsell & Partners, 285
Galapagos, 39
Game, Phillip, 332
Garrison Ground, 62
Georges River, 119, 121, 125
Giles, O. E., 158
Glandigal, 41
Glebe Island, 85, 123, 138, 163, 237, 238, 242, 289
Glenbrook, 72
Glesta, Anita, 196
Gofers, Tao, 270
Good Hope, 28, 68
Gordon, William M., 177
Goulburn, 56, 113, 208
Government Architect Office, 96
Graham, James, 177
Green, Charles, 28
Greenway, Francis, 17, 47, 49, 52, 53, 60, 96, 100, 210, 322
Grose, Francis, 44

H

Harper, James, 116
Harper, John, 177
Hawkesbury River, 119, 122, 182
Hayes, Henry Browne, 71
Heidegger, Martin, 300, 366
Henderson, Peter, 210
Hertmans, Stefan, 13, 23, 24, 168, 299, 366
Hobart, 46, 85, 144, 255, 334
Hoff, George R, 190 Hogan, Paul, 341
Homebush Bay, 336
Hong Kong, 23
Hornby, Phipps, 319
Hornsby, 182
Hoskins, Ian, 281, 298, 348, 366
Hughes, Robert, 31
Hughes, Thomas, 90
Hume Old Road, 77, 111, 113
Hume, James, 100
Hunters Bay, 20
Hutchinson, William, 176
Hyde Park Barracks, 17, 42, 50, 53, 54, 58, 62, 224, 229

I

Indonesia, 23
International Airport, 255, 311
Isler, Heinz, 293

J

Jamison Valley, 72
JMD Design, 142
Johnston, Alexander, 124
Johnstons Bay, 85, 287, 288
Jones Bay, 85
Jones, Ross, 158
Joseland & Gilling, 100, 264

K

Kann Finch & Partners, 264
Katoomba, 72
Kent, H. C., 98
King Street Wharf, 255, 274, 275
King, Susan, 46, 102, 193, 261, 273, 285, 339
Kirkpatrick, John, 10
Knatchbull, John, 332
Kneeshaw, John, 177
Kolas & Bryant, 264

L

Lachlan Swamps, 57, 77, 132
Lane Cove, 119
Lane, Frederick, 240
Lawrence Nield and Partners, 195
Lawson, William, 72
Le Corbusier, 261
Le Souef, Albert, 325
Lehmann and Tally, 264
Lennox, David, 113
Lewis, Mortimer, 47, 56, 159, 226
Lewis, Richard, 72
LeWitt, Sol, 261
Lighthouses:
  Carpentaria Lighthouse Ship, 276
  Cape Bowling Green Lighthouse, 276
  Hornby Lighthouse, 18, 319, 322
  Macquarie Lighthouse, 322
  Light Rail, 163, 184, 185, 238, 275, 289
Lindenthal, Gustav, 216
Lithgow, 208
Locke, Thomas Walter, 41
London, 18, 26, 42, 45, 47, 58, 82, 85, 176, 182, 212, 218, 240, 285, 312, 322, 342
Los Angeles, 25
Lower Canal, 137, 200
Luna Park, 163, 210, 232, 233, 348

M

Macarthur, John, 333
Macleay, Alexander, 68
Macleay, William, 68
Macquarie, Lachlan, 17, 37, 44, 46, 47, 50, 52, 53, 62, 72, 96, 100, 132, 140, 224, 240, 274
Madrid, 15, 23, 137, 176, 201, 301, 366, 372
Magallanes, 39
Manila, 12, 29
Mansfield, George Allen, 68
Marsden, Susan, 46
Martens, Conrad, 68
Massey, George, 104
McAdam, John, 77, 108, 110
McConnel, Smith & Johnson, 264
McCredie, Leith., 149
McMahons Point, 119
McRae, George, 104
Mediterranean Sea, 15
Medway Rivulet, 114
Melbourne, 23, 85, 231, 279, 281, 343, 366
Melville, Herman, 328
Memorial de Arias, 29
Mertens, Conrad, 34
Middle Harbour, 119
Mill Pond, 57
Miller, Milston and Ferris, 264
Millers Point, 139, 235, 270, 273, 274
Milson, James, 240
Milsons Point, 210, 232
Miró, Joan, 261
Mitchell, Thomas, 113
Montevideo, 39
Moore Steps, 163, 228
Moore, Clover, 270
Moore, Henry, 261
Moriarty, Edward Orpen, 77, 132, 133, 134, 140
Mort, Thomas, 52
Moses, Robert, 196
Mosman Bay, 240
Moss Vale, 116
Mossop, Spackman, 195
Mundey, Jack, 270
Mumford, Lewis, 170

N

Naimbaree, 40
Neeson Murcutt Architects, 196
Nervi, Pier Luigi, 255, 261
New Delhi, 23
New Guinea, 21
New York, 116, 119, 137, 163, 170, 176, 182, 196, 210, 216, 217, 218, 232, 256, 258, 301, 342, 366
New Zealand, 20, 21, 23, 25, 28, 39, 90, 151
Newcastle, 89, 132, 133, 172
Newgate, 42
Noguchi, Isamu, 261
Norfolk, 31
NSW, 44, 46, 47, 49, 50, 57, 60, 64, 72, 77, 87, 96, 100, 102, 103, 108, 114, 116, 121, 122, 127, 132, 133, 171, 184, 224, 248, 255, 270, 273, 284, 322, 333, 334, 343, 344, 346, 366

O

Ocean Outfall Sewers, 138 Olsen, John, 261
Opera House, 12, 14, 41, 64, 174, 221, 225, 240, 255, 281, 290, 295, 297, 298, 299, 300, 301, 303, 328, 335, 338, 339, 341, 346, 351, 366, 372
O'Sullivan, E .W., 89
Outback, 17, 23, 24, 344
Ove Arup and Partners, 264
Oyster Bay, 255, 313

P

Pacific Ocean, 13, 15, 28, 29, 100, 144, 278, 316, 372
Palmer, 44
Parks:
  Beare Park, 71
  Belmore Park, 127, 178, 179
  Blaxland Riverside Park, 336
  Bondi Park, 151
  Bronte Park, 317
  Centennial Park, 57, 77, 95, 128, 338, 343
  Chinese Garden of Friendship, 163, 239
  Cook and Phillip Park, 163, 193, 196
  Cremorne Garden, 240
  Cremorne Reserve, 78, 163, 240, 242
  Daves Point Park, 219
  Dawes Point Park, 163, 237
  Domain, 17, 47, 62, 64, 102, 103, 159, 196, 228, 255, 284, 285, 332
  Hyde Park, 17, 28, 42, 50, 53, 54, 57, 58, 60, 62, 64, 132, 163, 171, 183, 187, 191, 193, 224, 229, 264, 340
  King George V Memorial Park, 219
  Lex & Ruby Graham Gardens, 240
  Moore Park, 62, 132, 285, 322, 343
  Nagoya Gardens, 163, 191
  Observatory Hill Park, 163, 235
  Paddington Reservoir Gardens, 77, 142
  Palace Garden, 52
  Pioneer Garden, 64
  Prince Alfred Park, 163, 196, 372
  Queens Park, 132
  Royal Botanic Gardens, 17, 52, 64, 228, 299
  Sandringham Gardens, 163, 191
  Wentworth Park, 163, 237, 238
  Yurong Water Garden, 196
Parkes, Henry, 128
Parramatta, 17, 36, 37, 38, 39, 62, 64, 77, 119, 121, 123, 125, 127, 132, 133, 136, 138, 140, 141, 159, 163, 182, 184, 198, 242, 255, 262, 276, 285, 333, 336, 346
Parramatta River, 17, 39, 119, 121, 123, 125, 141, 163, 242, 262, 346
Parramatta Road, 39
Pasquier, François, 338
Patagonia, 34, 39
Pearl Bay, 20
Peddle Thorpe & Walker, 264, 266
Peddle, Thorp and Walker (PTW), 227
Pei, I.M., 170
Pemulwoy, 40
Penrith, 120, 182, 200
Peru, 39
Phillip Cox, Richardson Taylor & Partners, 275
Phillip, Arthur, 17, 27, 33, 45, 64, 193, 195, 225, 311
Plymouth, 30
Port Arthur, 58
Port Botany, 271
Port Jackson, 20, 21, 33, 72, 137, 240, 270, 318, 372
Portsmouth, 30
Portugal, 27

Potts Hill, 134
Potts Point, 54, 68, 71, 198

**R**

Racecourses:
  Canterbury Park Race Club, 161
  Rosehill Gardens, 161
  Royal Randwick Racecourse, 159, 161, 184
  Sydney Turf Club, 62, 161
Randle, William, 127, 140, 141
Randwick, 77, 158, 159, 161, 184, 366
Rankine & Hill, 227, 264
Red Hands Cove, 72
Rembert, Harry, 172
Remembrance Driveway, 113
Rey, Juan, 295
Richardson, Cox, 273
Rio de Janeiro, 31, 39, 301
Rivers:
  Georges River, 133
  Nepean River, 77, 120, 133, 134, 138, 163, 200, 206
Roberts-Goodwin, Lynne, 60
Robertson & Marks, 159
Robertson, James, 240
Roebling, John A., 216
Rose Bay, 328
Royal Navy, 28
Royal Society, 28
Rudd, Kevin, 220
Rudder Littlemore & Rudder, 264 Rum Corps, 44, 49

**S**

Saarinen, Eero, 293
Sánchez Ferlosio, Rafael, 153
Sapsford, Thomas, 60, 100
Seidler, Harry, 255, 256, 257, 258, 262, 264
Selfe, Norman, 174, 175
Sharpe, Wendi, 196
Shell Cove, 240
Ships:
  Catherine Adamson, 319
  Duncan Dunbar, 18, 319
  HMS Beagle, 34, 39
  HMS Endeavour, 28, 274, 276, 333
  Lady Penrhyn, 33, 372
  Queen Elisabeth, 174
  Queen Mary II, 174, 225
  Rose Hill Packet, 39
  Sirius, 27, 36, 255, 263, 270, 372
  Supply, 27, 36, 132, 138, 366,372
Sicard, François, 189
Simpson, Percy, 140
Smeaton, John, 256
Smith, Henry Gilbert, 253
Smith, John, 133
Smyth, Arthur Bowes, 33
Sobejano, Enrique, 290
Sorry Day Bridge Walks, 163, 220
South Head, 60, 318, 319, 322, 328, 334
Spain, 25, 27, 137, 248, 372
Spit, 119, 123
Sports facilities:
  Allphones Arena, 336
  ANZ Stadium, 336
  Australian Golf Club, 285
  Olympic Park, 161, 255, 287, 336
  Olympic Pool, 163, 232
  Sydney Cricket Ground, 184
  Sydney Football Stadium, 184
  Sydney Showground, 336
  Tennis Centre, 336
Stanley, Llewellyn & Whitten, 264
Stephenson & Turner, 264
Stephenson, Robert, 120, 210
Stocks & Holdings, 264
Strahan, Ronald, 325 Sudjic, Devan, 301
Sue Barnsley Design, 196
Sulman, John, 174, 175, 258
Surry Hills, 57, 196
Sutherland, 182, 206
Swimming pools:
  Andrew Boy Charlton Pool, 159
  Bond Ocean Pool, 158
  Giles Hot Sea Baths, 158
  Icebergs, 154
  Maccallum Seawater Pool, 240
  Mciver's Baths, 158
  Randwick Municipal Baths, 158
  Ross Jones Memorial Pool, 158
  The Bogey Hole, 157
  Wylies Baths, 158
Sydney Cove, 33, 39, 41, 60, 163, 221, 224, 319
Sydney Harbour, 14, 18, 34, 68, 85, 95, 119, 121, 163, 171, 175, 210, 212, 215, 220, 232, 235, 237, 255, 270, 271, 274, 281, 287, 290, 301, 311, 313, 314, 315, 316, 318, 322, 332, 334, 339, 346, 366, 372
Sydney Harbour Trust, 90
Sydney University, 78

**T**

Tahiti, 39
Tamarama Bay, 244
Tank Stream, 17, 45, 52, 57, 60, 100, 137, 226
Tanner & Associates, 142
Taren Point, 119
Taronga Zoo, 255, 322, 366
Tasman, Abel Janszoon, 21
Tasmania, 21, 42, 58, 334
Taylor, Thomson & Whitting, 264
Telford, Thomas, 77, 108, 110
Tench, Watkin, 60
Tenerife, 31
Thalis, Philip, 171, 187, 193, 366
The Common, 62
The Gap, 319, 322
The Heads, 18, 39, 322
The Rocks, 47, 90, 139, 163, 171, 172, 174, 183, 219, 220, 225, 235, 270, 273, 274, 366
Thornton, George, 60
Tierra del Fuego, 39
Tom Ugly Point, 119
Torres Strait, 21
Torroja, Eduardo, 293
Twain, Mark, 18, 20, 21, 24, 33, 42, 44
Tyburn, 42
Tzannes, Alexander, 128

**U**

United Kingdom, 42, 278
United States, 27, 42, 122, 134, 137, 151, 168, 170, 215, 256, 257, 263, 278, 281
Upper Canal, 133, 134, 200
Upper Nepean Scheme, 77, 133, 134, 138, 200
Urdaneta, Andrés de, 29 Uhrs Point, 119
Utzon, Jorn, 255, 290, 293, 294, 295, 297, 298, 366

**V**

Váez de Torres, Luis, 21
Vancouver, 18
Vasarely, Victor, 261
Vaucluse, 17, 71, 73, 322, 328
Venice, 13
Verge, John, 68
Vernon, Walter, 96, 127, 128
Vienna, 256

**W**

Wahroonga, 258
Walker, William, 41
Wallace, James, 127
Waller Roberts, James, 77, 121
Walls, H. D., 85
Walsh, Henry Dean, 90
Walter Burley & Marion Griffin, 198
Walter, Derek, 297, 300
Warren, W. H., 124
Warriewood, 209
Warrimoo, 18
Warwick Farm, 161
Waterfall, 182
Watsons Bay, 73, 322
Weekes, Norman, 189
Wentworth Falls, 72
Wentworth, William, 72
Wentworth, William Charles, 49, 71, 237
Wilkinson, Leslie, 149
Willoughby Bay, 20
Wingecarribee River, 56, 113, 114, 116
Witton, John, 120
Woodward, Robert, 273
Woollaravarre, 41
Woolloomooloo, 41, 44, 46, 64, 68, 77, 85, 102, 103, 137, 157, 159, 195, 196, 255, 284, 297, 306, 307, 309, 311
Woolloomooloo Bay, 64, 103, 137, 157, 159, 196, 311
Woolloomooloo Finger Wharf, 77, 85, 255, 306, 311
Wylie, Henry Alexander, 158
Wylie, Wilhelmina, 158

**Y**

Yacht Squadron, 151
Young, John, 64, 98

## Notes

[1] A note on the use of place names throughout this book is in order. English language accurately distinguishes between "harbour" ("harbor" in American English), which evokes meanings such as shelter, anchorage, and haven, and "port," which designates specifically the commercial port. We have opted to employ as synonyms the names of Sydney Harbour and Bay of Sydney, whereas we reserve the use of the term Port for properly port facilities, such as those of the old port of the city, Port Jackson, as well as the current one of Port of Botany or Botany Bay Port. Historically, it was first Sydney Harbour, later Port Jackson, and now that all the industrial and commercial activity has been taken elsewhere, it is again Sydney Harbour with all honors.

[2] "The generic name initially given to the South Pole continent, which covered until the South end of America, was Austral Land or Southern Land, without more precision because nothing was known of its true magnitude, and with this name the only thing indicated was its geographical location. It was thought that the present island of Australia was part of the continent of the Southern Land. /.../ Without going into the discussion of who was the first to see or arrive to Australia, it should be mentioned that the first occurrence of the use of the name *Australia* was by Pedro Fernandez de Quirós in the inauguration of the New Hebrides in April 1606, in which he called Australia the new territories in honor of the house of Austria that at that time reigned in Spain and sponsored his navigations, without knowing if they were island or continent, and thus it appeared in the cover and in the text of the report which he sent to the King relating his discoveries." Laorden Jiménez, Luis; 2013. Navegantes españoles en el Océano Pacífico. Madrid, 2016, p. 191-192.

[3] Data summarized from https://en.wikipedia.org/wiki/First_ voyage_of_James_Cook and from the Spanish, more summarized version.

[4] Lancho, José María; 2015. Australia y la gran historia 'robada' del Pacífico. El Diario Vasco, 13 dic 2015.

[5] In addition to the flagship Sirius, the ships were called Supply, Borrowdale, of 272 t; Fishbum, of 378 t, Golden Grave, of 331 t; Alexander, of 452 t; Charlotte, of 345 t; Friendship, of 278 t; Lady Penrhyn, of 338 t; Prince of Wales, of 333 t and Scarborough, of 418.

[6] The density of the native population is estimated in one for 450.000 acres (1820 $km^2$).

[7] According to a detailed map drawn 35 days after the arrival of the fleet to the port of Sydney.

[8] Some of these hidden flaws were discovered in the extensive rehabilitation made in the 1980s.

[9] As precedent in Sydney had been built in 1870 the Exhibition Building in Prince Alfred Park. See Prince Alfred Park in p. 196.

[10] Wotherspoon, Garry; 2010. The Domain. Dictionary of Sydney. Retrieved on 07-22-2016. http://dictionaryofsydney.org/entry/the_domain

[11] Stands out the pine of Wollemia - Wollemi pine (*Wollemia nobilis*) the first of its species to have been planted outside of its natural habitat, commemorating the place where Mrs. Macquarie had planted in 1818 a Norfolk Island pine (*Araucaria heterophylla*) with seeds originating in Norfolk Island, island located 1.600 km northwest of Sydney, and discovered by Captain Cook in 1774. These Norfolk Island pines were planted in numerous locations in Sydney and particularly in many of its seafront promenades. The Botanic houses the el National Herbarium of NSW, which exhibits the specimens collected by Joseph Banks in the epic trip of Captain James Cook along the Australian coastline in the 1770s.

[12] Among them stand out: Herb Garden –with different aromatic, culinary, and medicinal herbs–, Succulent Garden –a mosaic of textures and colors in a desertic landscape–, First Farm -showing the horticulture of the European settlers in Australia since 1788-, Palm Grove -great collection of palm trees initiated in 1862-, Camelia Garden, Begonia Garden, Oriental Garden, etc. and Sydney Fernery -the current fern greenhouse of 1993, which occupies the same location of the two former greenhouses. In the past this area was dedicated to the vegetable garden of the Government House, and currently it is the plant nursery of the park.

[13] Vaucluse House. Office of Environment and Heritage, NSW Government. Database. Retrieved on 08-20-2016. http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=5045008

[14] Nicholas, Joanna; 2015. Vaucluse House: A Brief History. Sydney Living Museums, NSW Government. Retrieved on 08-20-2016. http://sydneylivingmuseums.com.au/stories/vaucluse-house-brief-history

[15] http://gallery.records.nsw.gov.au/index.php/galleries/ westward-ho-a-trip-over-the-blue-mountains/

[16] http://www.viajablog.com/trekking-blue-mountains-australia/

[17] http://bluemountains-tours.com.au/spanish/?page_id=804

[18] http://www.australia.com/es-cl/places/blue-mountains.html

[19] The term Finger Wharf has not taken over in the portuary lexicon of any other country. It is only employed in Australia, and its best example of Woolloomooloo is the only thing that comes out when one searches it online. Its shape is similar to that of an American pier, such as those built in new York as prolongation of the grid street plan.

[20] Royal Commissions for the Improvement of the City of Sydney and its Suburbs. Minutes of Evidence ; 13 July, 1908 :54

http://www.photosau.com.au/cosmaps/maps/pdf/RC_R/7%20-%20MINUTES%20OF%20EVIDENCE.pdf

[21] The visit of Victoria Barracks only takes place on Thursday at 10:00. Visitors must register ten minutes prior in the back door, located in Park Moore Road, to be accompanied by one of the volunteers of the Guide Corps, made up of retired volunteers. In our case, we were escorted by John Smith, from Riverwood, Sydney, who kindly provided detailed and excellent explanations to all our questions during the two hour long visit.

[22] Berri-me "black swan to the south."

[23] Also author of the bridge that carries his name in Parramatta.

[24] Morton, Philip; 2014. Highlands History: Historic local unique bridge still stands at Black Bob's. Sourced from the archives of Berrima District Historical & Family History Society. Southern Highland News, 20 Oct. 2014. Retrieved on 08-20-2016. http://www.southernhighlandnews.com.au/story/2634288/highlands-history-historic-local-unique-bridge-still-stands-at-black-bobs/

[25] http://www.environment.nsw.gov.au/heritageapp/ View HeritageItemDetails.aspx?id=4801296

[26] *Melaleuca quinquenervia*.

[27] *Ficus rubiginosa* - Port Jackson fig, *Quercus ilex* - Holm oak y *Araucaria heterophylla* - Norfolk Island pine

[28] *Ficus macrophylla*.

[29] Biography composed by M. Maunsell in 1985 and collected in the report for the declaration of Prospect Reservoir as a work of heritage interest.

[30] Works by Edward Orpen Moriarty Chief Engineer of Harbours and Rivers Navigation:

Long reach works:

1861 Newcastle Northern and Southern Breakwaters
Wollongong Harbour Improvements
Kiama Harbour Construction
1867 Clarence River Improvements, including Moriarty 's Wall 1873 Moruya River Improvements
1874 Trial Bay Prison and Breakwater
1880 Upper Nepean Water Supply Works, including Prospect Reservoir

Notable or relevant works:

1858 Gladstone (Old) Water Supply
Newcastle Lighthouse
Obelisks (leading marks) Sydney, Newcastle
Steam Dredge "Hunter"
1860 Botanic Gardens Seawall
1861 First (low level) Glebe Island Bridge
Road/Wharf Twofold Bay
Also 1861/66 supervised Pyrmont Bridge (private construction)
1862 Port Stephens Lighthouse
Eden Lighthouse
Stearn Dredge "Pluto", Shoalhaven
Cape St George Lighthouse
Fort Macquarie Seawall
1863 Cooks River Darn - additional (northern) flood gates
1864 Morpeth Coal Shoots
Newcastle Coal Basin
1865 Dredge "Vulcan"
Darling Island Reclamation and Stone Dyke (Darling Harbour)
1866 Dunmore Bridge, Hunter River
Dredge "Pluto"
Newcastle Coal Staiths
Wollongong Coal Shoots
1868 Pitnacree Bridge, Hunter River
Dredge "Samson"
1869 Dredge "Titan"
1870 Darling Harbour Iron Wharf and Steam Cranes
Blackwattle Swamp Reclamation (Wentworth Park)
1871 West Maitland Bridge
1872 Ulladulla Wharf and Tramway
Wollongong Lighthouse
1873 Liverpool Dam Raising
Ulladulla Lighthouse
Moruya Northern Breakwater
Blue's Point Wharf
1875 Hinton, Hunter River - first steam crossing punt
Macquarie Street - ·continuation and formation (completed 1883)
Dredge "Newcastle"

[31] http://www.waternsw.com.au/ data/assets/pdf_ file/0003/59025/Celebrating-125-years-of-the-Upper- Nepean-Scheme-brochure.pdf

[32] http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=5056348

[33] Sánchez Ferlosio, Rafael; 1992. Juegos y deportes. El País, August 9, 1992:9

[34] http://www.photosau.com.au/cosmaps/maps/pdf/RC_R/7%20-%20MINUTES%20OF%20EVIDENCE.pdf

[35] http://www.nla.gov.au/apps/doview/nla.aus-vn4670519-p.pdf

[36] Among these native species were the *Flindersia australis* - Crow ash, *Nuytsia floribunda* - Flame tree, *Brachychiton populneus* - Lacebark kurrajong and *Araucaria cunninghamii* - Hoop pine. Stands out the lineup of fig trees in Moreton Bay - *Ficus macrophylla*.

[37] http://www.anzacmemorial.nsw.gov.au/history

[38] Given this name in honor of the private sponsor J. F. Archibald.

[39] See Royal Botanic Garden & Domain p. 54.

[40] Whitaker, Anne-Maree; 2008. Prince Alfred Park. Dictionary of Sydney. Retrieved on 07-22-2016. http:// dictionaryofsydney.org/entry/prince_alfred_park

[41] With the NSW medal at the Australian Institute of Landscape Architects (2013), urban landscape at the World Architecture Festival (2013) and the architecture mixed use constructed category at the 2012 Sydney Design Awards.

[42] Prince Albert Park. City of Sydney, NSW. Retrieved on 07-22-2016. http://www.cityofsydney.nsw.gov.au/explore/facilities/parks/major-parks/prince-alfred-park

[43] For detailed dimensions and data, see the brochure on the Upper Nepean System in: http://www.waternsw.com.au/ data/assets/pdf_file/0009/55926/Upper-Nepean-Dam-Booklet_WEB1.pdf

[44] See details in https://www.sydneywater.com.au/SW/ water-the-environment/how-we-manage-sydney-s-water/ wastewater-network/wastewater-treatment-plants/index. htm#

[45] www.reconciliation.org.au/wp-content/uploads/2015/05/150520-Sorry-Day.pdf

[46] Monocle, vol. 10, num. 95 (jul 2016): 185.

[47] NSW Legislative Assembly (1866). Cit. in: [5:348].

[48] www.eldiario.es/economia/Avistan-tiburones-horas-costa-australiana_0_468603149.html

[49] The beach was originally known as Cabbage Tree Beach, on account of the many Australian Latanias, or Cabbage-tree palm (*Livistona australis*) present in the area.

[50] Araucarias excelsa - Norfolk Island pines (*Araucaria heterophylla*)

[51] Siedler, Harry; 2003. In Nicholas, Joanna. Rose Seidler House, a new way of living. Sydney Living Museums, NSW Government. Retrieved on 08-10-2016. http://sydneylivingmuseums.com.au/stories/new-way-living

[52] Currently, this museum-house is part of the Sydney Living Museums, managed by the Historic Houses Trust of New South Wales, and it is open to the public on Sundays since 1991.

[53] Source: Sydney Museum.

[54] When art meets architecture. Interview to Penelope Seidler; 2014. Sydney Living Museums, NSW Government. Retrieved on 10-8-2016. http://sydneylivingmuseums. com.au/stories/when-art-meets-architecture

[55] http://www.visitsydneyaustralia.com.au/blues-pt-tower.html

[56] https://mirrorsydney.wordpress.com/tag/amp-building-sydney/

[57] http://www.news.com.au/national/australias-1960s-concrete-buildings-are-under-threat-but-are-they-worth-saving/news-story/c992b5f22ba40473adfaf66f6c253cd2

[58] http://www.smh.com.au/comment/for-lovers-of-sydney-disappointments-are-coming-thick-and-fast-20160804-gqkqyp.html

[59] http://www.dailytelegraph.com.au/news/nsw/unions-block-sirius-demolition-as-protests-ramp-up/news-story/3c73073e88499b16b7c90ade8bc9321c

[60] The competition for such a building in Bennelong Point had been convened in 1956 and resolved in the following year, but the suitability of the location had been already acknowledged in 1951. It was proposed by Viennese planning consultant Karl Langer, and defended shortly afterwards by the conductor of the Sydney Symphony Orchestra Eugene Goossens, who had an aerial view of the bay upon his arrival from England by seaplane after the war. Labor Prime Minister Joe Cahill combined a utilitarian approach to transportation with a democratic view of aesthetics and promoted buildings graceful enough to provide life with a certain charm, in order to help develop a better world with a more enlightened community...

The almost 900 registered competitors from 45 countries sent in 900 proposals. The winner was a relatively unknown Danish architect, Jorn Utzon [35: 269].

[61] Source: Formas de la Opera House [65:146]

[62] Peake, Owen; 2014 INTERSCAN – A Great Australian Invention. Engineering Heritage Australia Vol.1 No.4 (Sept 2014):10-11.

[63] http://www.legislation.nsw.gov.au/#/view/EPI/2005/590/ full (accessed 29 September 2016 at 04:15)

[64] The brochures state that dolphins, sharks, whales and blue penguins can be spotted, many of them in their migratory route from Antarctica to the warm tropical waters of the Great Barrier, although it takes some skill to see them.

[65] The first designs (1913-1914) are ascribed to a navy officer, the Spanish Colonel Alfred Spain; later the Public Works Department took charge of the project in 1915.

[66] In 2004 a new upper entrance to the zoo has been built, comprising the remodeling of the old access building and a new car park, tram station, and visitors' center with shop and cafeteria (BVN Architecture, 2004), awarded in 2012 with the Institute´s Lloyd Rees Award for Urban Design. Jackson Teece has designed several of the new projects: Wild Asia (2006), the installations for male elephants and Great Southern Oceans (2008), and the enclosure for the chimpanzees (2011). One of the latest projects is the Lemur Forest Adventure (Hill Thalis Architecture & Urban Projects - Jane Irwin Landscape Architecture, 2013), over the old seal swimming pools, incorporating a walk through the forest, a tour among the lemurs and night installations [12:10-13]. Currently there is a new master plan underway which gives particular attention to endangered species with new projects, such as the Sumatran Tiger Experience (2016).

[67] As a possible explanation of the inaugural incident, the SMH mentions the dissatisfaction created by the powerful labor leader John T. Lang (1876-1975). When he retook power in 1930, he launched a plan to combat the depression and requested the federal government a moratorium on British credits and the reduction of the interest of State treasury bonds. The State Premiers conference of 1930 adopted another plan, raising taxes and reducing pensions and public officers' salaries, and Lang decided not to pay the interest of the bonds emitted in NSW. But the Prime Minister paid the interests with federal funds and introduced legislation to recover the money from the government of NSW. Lang was not willing to pay and withdrew the State funds from the federal banks. This unchained a wave of funds withdrawals that forced the State Government Savings Bank to close. As a consequence, Lang was terminated in May 1932, two months after the inauguration of the bridge.

[68] https://learn2sail.com.au/wp-content/uploads/2015/11/sstart2013.jpg (Search in Chrome 11/28/2016: Regata Sydney - Hobart)

[69] 2016 New Year's fireworks in Sydney. Video: http://www.rtve.es/alacarta/videos/noticias-24-horas/24h- ano-nuevo-australia-311215/3429715/

[70] http://static.dnaindia.com/sites/default/files/2015/12/31/410087-new-year-picturereuters.jpg

[71] This land was inhabited by the Aboriginal clan Wangal and after the arrival of the first fleet in 1788, a group of scouts The Flats. In 1807 it became part of Newington Estate, acquired by John Blaxland, and at the end of the 19th century, the government acquired part of the land to build a residence home for elderly women. Later, great part of the land was reclaimed from the river and wetlands to build dumping sites, hosting up to eight of the dumping sites of the city. The area had industrial and military activity for several years, hosting a slaughterhouse, a brick factory and a military armory. In the mid 1980s, in the areas close to Australia Avenue a technological park for several companies was promoted, but the plan did not reach fruition and was finally relocated to Eveleigh.

[72] https://www.rbgsyd.nsw.gov.au/Venue-Hire/Wedding-Ceremonies

[73] The neighborhood of Kings Cross, formed around the high crossing of William Street, Darlinghurst Road and Victoria Street, a place called The Cross, had always been an area of intense activity, and the reputation of hosting organized crime. Its proximity to the port, particularly on the side of Elizabeth Bay, close to the navy base of Garden Island, guaranteed the influx of sailors and marines since the times of the Pacific war, and the areas was crowded with pubs, theaters and nightlife bars.

[74] The Night in King Cross: Keep Sydney Open. Monocle, 95:087

[75] http://www.nyu.edu/content/dam/nyu/globalPrgms/documents/Sydney/Syllabi/NODEP-UA9TBA_Martin_20131.pdf

© ACS, Actividades de Construcción y Servicios, S.A., 2016
© Miguel Aguiló, 2016

Editorial team and editor:
Patricia Hernández Lamas (Architect)
Ana Rubio Gavilán (Civil Engineer)
Oscar Castro Cuartero (Civil Engineer)
Beatriz Cabau Anchuelo (Architect)

Design and layout: Roberto Turégano and Julián Ortega
Prepress: Museoteca
Production: Ofur Soluciones Gráficas, S.L.

ISBN: 978-84-617-7311-4
Legal deposit: M-42998-2016

All rights reserved.
Total or partial reproduction prohibited
by any means without the proper authorization

**Grupo ACS** Avenida Pío XII, 102
28036 Madrid
Tel. 91 343 92 00
www.grupoacs.com